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# 1959 <br> CONSUMPTION OF FOOD 

## IN THE UNITED STATES

## 1909-52



Agriculture Handbook No. 62


UNITED STATES DEPARTMENT OF AGRICULTURE BUREAU OF AGRICULTURAL. ECONOMICS
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This is a revised edition of United States Department of Agriculture Miscellaneous Publication No. 691, Consumption of Food in the United States, 1909-48. It was prepared by members of the staff of the Bureau of Agricultural Economics under the leadership of Marguerite C. Burk, in charge of the consumption work of the Bureau, who wrote the general sections and who brought together and integrated the other sections to form the report as a whole. Helen Eklund was responsible for the assembly of the basic statistical materials. A number of the statisticians in the Bureau who specialize in commodity fields, as well as several analysts elsewhere in the Department, particularly in the Bureau of Human Nutrition and Home Economics, made specific contributions. These are indicated at appropriate points in the text. Finally, much credit for the development of the great mass of data on which the study rests belongs to former members of the staff of the Bureau of Agricultural Economics and to other researchers in the Department, who have been adding to the knowledge of this field throughout the last 20 to 25 years.

Experience with the earlier publication and its two supplements has led to the formulation of plans for making annual revisions generally available. Provision has been made for inserting this handbook in a loose-leaf binder. Space has been provided at the end of each table for entering data from an annual supplement to be published in The National Food Situation each year. It is planned to issue a revised set of looseleaf tables after about 3 years.

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## INTRODUCTION

This publication revises and brings to date the detailed information on per capita consumption of all major food commodities in continental United States, including the basic data on supplies and distribution from which the consumption estimates are derived. Sources and methods are described and evaluated; indexes of supply-utilization, production, and per capita civilian consumption are developed; the nutritive value of the food supply is estimated and appraised; and some supplementary information useful for the analysis of the consumption of and the demand for food is presented.

The U. S. Department of Agriculture has collected and published information on food production for many years, but information on food consumption is of comparatively recent development. Interest in food consumption was heightened by the appearance of the surplus problem in agriculture following World War I, and the need for accurate data became particularly apparent in connection with production planning programs under the Agricultural Adjustment Act of 1933 and subsequent legislation. One objective of the production programs was the maintenance of adequate supplies of food for domestic consumers. To establish this objective it was necessary to develop historical series on per capita food disappearance which could be analyzed in terms of long-time trends, shifts in demand, and nutritive content. This interest in food-consumption data, which arose partly from the farm-surplus problem, was reinforced through events of an opposite character - the droughts of 1934 and 1936 awakened fears of food shortages. The effects of these droughts on the national food supply were analyzed in a series of special reports issued by the Bureau of Agricultural Economics between October 1934 and September 1936.

The Bureau issued its first compilation of per capita consumption data in 1941 for use in appraising our food requirements and resources in the war emergency. The official estimates of the per capita consumption of major foods have been reviewed and published four times a year in the Department of Agriculture publication, The National Food Situation, since 1942. In 1949 all pertinent data and related information for the years beginning with 1909 were brought together in the Department's publication, Consumption of Food in the United States, 1909-48. I/

The Bureau's data on per capita consumption have proved useful to agricultural economists, producer and consumer groups, nutritionists,

1/ U. S. Department of Agriculture, Misc. Pub. No. 691. Washington, D. C. 1949.
market researchers, advertisers, Government analysts, and food specialists of all kinds. Demand has increased not only for the regularly published series, but for the underlying data on supplies and distribution, for descriptions of the methods used in estimating, for numerous special breakdowns of the data, and for index numbers of several kinds.

Methods and data used in ascertaining the supply and distribution of the major food commodities are presented in chapter l. A new index of total supply-utilization of agricultural food commodities and a revised index of food production, described hereafter as the index of farm marketings and home consumption, were developed. The data and methods used in these computations are given in considerable detail and their uses and limitations are discussed.

The long-time series of per capita consumption of major foods on a primary distribution weight basis and for calendar years, comparable with the series regularly published in The National Food Situation, are to be found in chapter 2. In response to many requests, this information is supplemented by tables showing the fresh weight equivalents of processed fruits and vegetables.

For many purposes, it is desirable to convert the per capita consumption of individual foods to comparable terms, rather than to work with farm weights of some and processed weights of others. The most comprehensible basis for use in the study of consumption of food is the form in which it is sold in retail stores. Accordingly, the per capita consumption of individual foods is given in chapter 3 on a retail-weight basis, with pertinent information concerning the limitations of the data to enable discriminating use to be made of the series. The price-weighted index of per capita consumption, which is widely used as an indicator of changes in average consumption of food in this country, was partly revised and shifted to a post-World War II base. The prices used as weights and the methodology followed in this food-consumption analysis are discussed in this chapter. To satisfy a persistent demand, an index of food consumption on a poundage basis is also included.

During and since World War II, estimates of per capita consumption of food, together with information relating to the composition of food, have been used by the Bureau of Human Nutrition and Home Economics to determine the nutritive value of the food supply of this country and to provide a basis for international comparison with the food supplies of our principal allies. Methodology and limitations of these estimates are discussed in chapter 4. Comparable data are published currently in The National Food Situation.

Information concerning income, prices, and expenditures related to food consumption through the period covered by the quantity data has been assembled in chapter 5 in forms readily adaptable to analytical purposes. The material in this publication provides the basis for much of the analysis of the demand for food carried on within the Bureau. It is hoped that this publication may stimulate further progress on the part of others who are doing statistical and economic analysis in the field of food consumption.

## Disappearance Data and Their Limitations

Official estimates of the United States Department of Agriculture of per capita consumption of food in this country are derived as residuals from data on production and utilization. From the annual supply of each food (production plus beginning stocks plus imports) are deducted feed and seed use, industrial use, other nonfood use, exports and shipments, Government purchases for export, and ending stocks. The residual is considered to be civilian consumption. (See the appendix for tables of the supply and distribution of all major food commodities.)

Strictly speaking, estimates of this sort should be designated as supplies moving through trade channels for domestic consumption. Because of the perishability of most foods, however, changes in disappearance may be presumed to be closely associated with changes in actual consumption, provided the estimates of disappearance are reliable. The disappearance data for food have proved accurate enough to permit measurement of the average level of food consumption in the country as a whole, to show year-to-year changes in consumption of the principal foods, to permit calculation of the approximate nutrient content of the food supply, to establish long-time trends, and to permit statistical analyses of effects of prices and incomes on consumption of the principal foods.

Despite the fact that the existing estimates of disappearance permit the measurement of a number of significant aspects of food consumption in this country, several limitations on these estimates need to be fully recognized.

The basic disappearance data for the several foods are obtained at various levels of distribution; for example, meat in terms of dressed weight where slaughtered and fruits and vegetables in terms of farm weight. (See tables 54, 58, and 59.) To approximate more closely the actual consumption level, it is necessary, in most instances, to convert the estimates of disappearance at the primary distribution level to approximate weight at the retail level by the application of average waste factors. (See chapter 3 for discussion of the estimates of the waste factors and their limitations.) These factors were not varied from year to year in preparing the estimates of consumption in terms of retail weights, although we know that annual variations do exist, as shown by estimates of waste now prepared by the Crop Reporting Board for a few commodities.

Ideally, estimates of consumption at the retail level should undergo a further adjustment for food wastes in the home, but data for this purpose are sketchy and unreliable. Therefore, both the index of per capita consumption and the nutritive value of the per capita food supply are calculated in terms of food as purchased at retail.

In addition to the gap between the disappearance data in terms of primary distribution weights and actual consumption in the home and elsewhere, certain limitations of the disappearance data themselves should be noted. The basic statistics on agricultural food production are tied to the Census of Agriculture, which has been taken every 5 years. Statistics for intermediate years are estimated from sample data and by elaborate checks with supplementary materials. The degree of accuracy in the production estimates varies considerably. Moreover, although production of major items, such as citrus fruits, is estimated with care, no estimates are made of production of minor foods, as some of the berries. Federally inspected livestock slaughter is reported regularly, but information on year-by-year farm slaughter is estimated from sample reports. Beyond the production level, important information is lacking on the nonfood utilization of certain items; and the nonavailability of crucial data regarding stocks presents insurmountable problems in estimating the disappearance of some food commodities. Finally, the per capita estimates are subject to statistical errors made in the course of estimating production, changes in stocks, foreign trade, and military takings.

Furthermore, estimates of per capita disappearance are subject to limitations not connected with the statistical accuracy of the basic data. These estimates are national averages which do not reflect changes in the make-up of the population; for example, the proportion of babies in the population and the withdrawal of younger men into the armed services during World War II. (See table 53 for population data.)

As national averages, the per capita consumption estimates also obscure the differences between seasons of the year, regions, urban and rural habits, family size and income, age composition, occupational differences, and wartime anomalies such as black markets in rationed commodities. Furthermore, differences between household consumption and consumption in restaurants, hotels, and private institutions, are not indicated.

## Analysis of Total Food Supplies and Utilization 1/

The needs of World War II required not only the improvement of data with respect to the supply and utilization of individual foods, but also the development of several measurements that would provide answers to overall questions, such as the general level of our food supplies, the relative contribution of domestic production to these supplies, and the utilization of the supplies by the civilian population, the military services, our allies, and through foreign commercial purchasers. A revised and more comprehensive index of total supply-utilization was developed to replace the index of total food utilization which has been published in The National Food Situation for a number of years. The
new index covers all agricultural commodities having food uses; it will form an integral part of the index of total supply and utilization of all agricultural products, both food and nonfood, now in preparation. Estimates for this index for current years are to be carried in each issue of The National Food Situation. As soon as the final data for the great number of series used in computing this index are available for each year, revisions will be made in the preliminary estimates, probably about 6 months after the end of the year.

The index of total supply-utilization of agricultural food commodities provides an aggregative measure of the relative level of food supplies, the sources of our food supply, and the distribution of the food supply to the civilian population, to our Armed Forces, to our Territories and foreign countries. Each year's food supply is equivalent to the total flow of agricultural food products into distribution during the year, not the total supply available at any particular time in the year nor for the year. Agricultural food commodities, as defined for this index, included crop and livestock products that were used as human food in any way. Forest products (with the exception of maple sugar and sirup), greenhouse and nursery items (other than fresh tomatoes, lettuce, and cucumbers), fishery products, and spices were excluded. Approximately 87 percent of the annual 1947-49 farm value of agricultural commodities is covered.

This index was designed to measure changes in quantity. However, it was not developed from aggregate tonnage alone but from the cumulative totals of quantities of agricultural commodities having food use utilized in each year multiplied by average farm prices in the base period, 1947-49. Thereby it combined these commodities on the basis of their value relationships or economic importance rather than on the basis of physical weights. The same prices were used for all years so that changes in price did not affect the index. But shifts in supply and utilization from lower priced items, reflecting lower costs of production and consumer preference, to higher priced commodities did affect the aggregate values and the index even though the total tonnages might have remained the same or might have actually declined.

The indexes given in tables 1 and 2 cover 1924 to date. Table 1 presents both the percentage contribution of domestic production, imports, $2 /$ and reported changes in stocks to the total supply of agricultural $\bar{f}$ ood products used each year, and the percentage distribution of such supplies moving into civilian consumption as food, to the military services, to the Department of Agriculture primarily for export, for export and shipment through commercial channels, and into domestic nonfood uses. In 1950, for example, this index shows that of all agricultural food products in this country, 94.7 percent was

2/ Imports for consumption, 1934 to 1952; general imports less reexports from 1924 to 1933 for most commodities. However, for a few commodities prior to 1934, import data are general imports only.

$1 /$ These data replace the index of total food utilization. That index traced only the quantities of farm products used for food. This new index covers the supply and utilization of the total amount of all agricultural products having food uses, including their nonfood uses. The percentage distribution for each year was developed from quantitative data on eupplies and use of the unprocessed farm products and of processed commodities by multiplying quantities by average prices in 1947-49. Values of processed items for the several categories were adjusted back to values in terms of farm prices.

> 2/ Negatives indicate net increases in stocks from the beginning to the end of the year; positives signify net withdrawals from stocks.

3/ Includes procurement for civilian feeding in areas occupied by our Armed Forces.
4/ Includes use for seed, feed, industrial alcohol, alcoholic beverages, etc., and same waste and loss at farm level. Approximately 80 percent of nonfood use is for feed.

5/ Excludes deliveries by the Department of Agriculture.
6/ Delfveries by the Department of Agriculture were for lend-lease, relief, and purchases for foreign goverments, except for meat transactions in the drought years. Net purchases represent quantities withdrawn from comercial channels while deliveries represent shipments out of the country; the difference between the two measures changes in the Department's stocke.

I/ Negatives indicate net reductions in stocks; positives signify increases.
8/ Preliminary.

Table 2.- Supply-utilization of agricultural food products: Percentage of 1947-49 total utilization, 1924-52 1/


1/ These data replace the index of total food utilization. That index traced only the quantities of farm products used for food. This new index covers the supply and utilization of the total amounts of all agricultural products having food uses, including their nonfood uses. The percentage distribution for each year was developed from quantitative data on supplies and use of the unprocessed farm products and of processed caumodities by multiplying quantities by average prices in 1947-49. Values of processed items for the several categories were adjusted back to values in terms of farm prices. This table shows the supplyutilization in each year expressed as percentages of total utilization in 1947-49.

2/ Negatives indicate net increases in stocks fram the beginning to the end of the verar; positives signify net withdrawals fram stocks.

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7/ Negatives indicate net reductions in stocks; positives signify increases.
8/ Preliminary.
supplied by domestic production, 6.6 percent by imports and shipments, and 1.3 percent by net increases in stocks from the beginning to the end of the year. On the distribution side, the index shows that 67.4 percent of total utilization was consumed in food uses ( 66.0 percent by civilians and 1.4 percent by the military), 27.8 percent in nonfood uses, 3.2 percent by commercial exports and shipments ( 2.5 percent for food use and 0.7 percent for nonfood use), and net purchases by the United States Department of Agriculture for export amounted to 1.6 percent. It should be noted that the Department's activities are expressed in terms of net purchases for export as well as in terms of shipments out of the country. Thus, although purchases in 1950 represented 1.6 percent of total utilization of agricultural food commodities, quantities approximating 1.4 percent were shipped. The difference between the two is represented by increases in stocks in the hands of the Department. Total purchases by the Department in each year were adjusted by sales from its stocks or current purchases by the Armed Forces, by sales to commercial firms, and by direct distribution to domestic consumers to arrive at net purchases for export. In table 2, the figures for each year are expressed as a percentage of total food supply-utilization in 1947-49, instead of that for each year.

## Uses of the Index

At the risk of repetitiveness, it seems desirable at this point to summarize some of the uses for which this index was designed. It provides an overall measure of the changing economic significance of foreign trade to our agricultural economy by indicating the proportions of our food supplies which come from outside continental United States and the proportions that are shipped out to our territories and foreign countries. For years beginning with 1941, the index similarly measures the changing significance of military takings of food and that of the Department of Agriculture's procurement of food for export.

By relating data for individual years to the base period, 1947-49, the index meets the need for a framework for the overall analysis of the demand for farm products, measured at the farm level. A supplemental bulletin with value aggregates by commodity groups, through time, is expected to be issued to facilitate such analytical work no later than completion of the extension of this index to agricultural commodities with only nonfood uses, such as cotton, tobacco, and wool. The subindex of civilian use for food purposes can be adjusted for changes in the population to derive a measure of changes in the per capita utilization of farm food products, in terms of farm-product weights and farm prices (see table 43) as opposed to the civilian per capita food-consumption index (described in chapter 3) which involves the use of equivalent retail weights and prices. The index of domestic utilization at the farm level will provide a more satisfactory basis for study of the demand for farm products because it avoids the complication of differences among commodities in marketing services. However, both of these indexes utilize base-period prices throughout so they should not be confused with measures of farm income (changing quantities times changing farm prices) or of food expenditures (changing quantities times
changing retail prices plus the effects of shifts in marketing patterns). Other uses of this index and its components will no doubt be discovered, as analyses of the patterns of supply and utilization of food are developed.

## The Revision

The major conceptual differences between the revised index and the old series are: (1) The new index provides a more comprehensive measure by representing total supply and utilization of all agricultural commodities with food uses, whereas the old index represented only food uses of such commodities; and (2) adjustments are made for food and nonfood uses in successive stages of distribution. Formerly, only an estimated allowance for initial food use was made.

The significant statistical changes that were made are: (1) The index of total supply-utilization of agricultural food commodities uses the averages for 1947-49 as its base instead of the averages for 1935-39; (2) price weights in the base period are weighted averages of annual farm prices, whereas price weights for the old series were simple averages of monthly farm prices; (3) the commodity coverage of the index was expanded; (4) the handling of processed commodities was combined with that of unprocessed items on a consistent basis.

As the first step in revising the index, data on farm production of food crops, excluding quantities not harvested for economic reasons or excess cullage of harvested crops, and data on livestock marketings were substituted for net production for food. Whereas, net production for food represented only the volume which either entered the marketing system or went directly into human consumption on farms, farm production shows agricultural production of food crops for food and nonfood use, whether it is marketed or retained on farms where grown. This change was necessary to include in the source of supply the quantities of farm production utilized for feed, seed, and nonfood industrial uses and production of nonfood crops and livestock products - mainly cotton, tobacco, hay, field seeds, vegetable seeds, wool, and mohair - which will be in the index of total supply-utilization of all agricultural products.

Because the concept of farm production includes production for use as seed and feed, some duplication results, as the quantity of production used for seed in a given year is again measured as a unit of crop production in the following year. Similarly, production of feed is later recounted in the form of milk and live animals marketed. But no adjustments were made to obtain a net farm-production basis because the alm of the index is essentially to provide a measure of the flow of goods produced by agriculture to the agricultural system itself (internal transfers) and outside the agricultural system (external transfers), in terms of the quantities used each year. For example, the quantity of corn fed to livestock reflects the demand by agriculture for part of its own production, whereas the quantity of corn used by the corn-oil industry represents demand from outside the agricultural economy. This flow of goods has two aspects. One is the source of the supply of commodities, production, imports, and stocks, for utilization in a given year, and
the other reflects the channel of utilization, by agriculture itself and by other industries 3/ for food and nonfood uses, exports and shipments, and Department of Agriculture takings.

Compilation of uses by industries required the second conceptual change of the revision. For each agricultural commodity produced there are many uses. Some are classified as food uses, the remainder as nonfood uses. But a complex problem is entailed in measuring the quantity of production that goes into these two broad categories because subsequent processing changes the identity of many products. For example, we can readily obtain data showing the quantity of soybeans produced at the farm level. Quantities used for seed and feed on farms where grown as well as the quantity sold are reported by the Department of Agriculture. It is then simple to classify disposition for feed and seed as a nonfood use. But how is the quantity sold to be classified? Additional quantities are used for feeding in the form of soybeans, and the remainder is used for crushing, which yields oil and cake and meal. In turn, soybean cake and meal are utilized as feed and as flour for food; the processed oil goes into shortening, margarine, and other edible uses, as well as into the soap industry, the drying-oils industry, and other nonfood industrial uses. Quantities of soybean oil and cake and meal are also exported through commercial channels or bought by the Department of Agriculture for export. If the index of total supply-utilization is to be used in analyzing demand, the effect of the quantity of stocks and imports of these soybean products had to be considered. In addition to a measurement of soybeans, there was also needed the supply and disposition of soybean oil and soybean cake and meal - three distinct commodities.

It was desirable to allocate the quantity of soybeans and soybean products used annually to the industries consuming them; then to combine such industrial disappearance into two major categories - food and nonfood - and, in addition, to make allowances for commercial exports and shipments, military takings, and Department of Agriculture takings. When these groupings were obtained, they could be expressed as percentages of total utilization in each year (and compared with that in a base period) to give an index of the distribution of agricultural commodities that have food uses.

The major difficulty in constructing such an index lay in the fact that many products are used in various forms and for different purposes. For example, the quantities of soybeans crushed are not comparable with the physical units of output (crude oil, cake and meal) which are subsequently consumed for food and nonfood uses. Formerly, this problem was avoided by working only with food uses of soybean oil. The new procedure traced the flow of soybeans into final utilization,

[^0]allocating to each category its share of the total farm value of soybeans used in that year after adjustment for imports and net changes in stocks of processed products. This procedure took prices of joint products (in the base period) into account as well as quantities of each, because the principal objective of the index is to supply a measure of the changing structure of the utilization of agricultural products for use in economic analysis. Several steps were involved'in this procedure.

First (again using soybeans as the example), total stocks of soybeans available on January 1 were added to farm production and imports of soybeans. When adjusted for ending stocks this figure gave the total quantity of soybeans used in a year. The quantities used for feed and seed on farms where grown were obtained from published reports of the Department of Agriculture. The quantity of soybeans crushed by mills was compiled from monthly census reports; and the quantity exported was obtained from official Bureau of the Census reports. The quantity of soybeans sold to other farmers for feeding purposes was then derived as a residual figure. These basic data were valued at the average price received by farmers (in the base period) to get the supply and distribution of soybeans in terms of farm value. See figure 1 .

The second step was to develop supply and distribution tables for soybean products and to express them in equivalent farm values. The figure shows this follow-through in terms of products processed from soybeans. The total quantity of soybeans sold by farmers for crushing is used to produce two valuable joint products - oil and cake and meal. As the equivalent farm values of the production of these two iter were already represented by the value of soybeans crushed, the values of oil and of cake and meal were not included in the index per se. But as mentioned above, changes in the stocks of these products, of the quantities imported, and of the uses of such products by different industries influence the total supply-demand relationship for soybeans. For example, if stocks of soybean oil are large, and demand for oil remains unchanged, then it can be expected that smaller quantities of soybeans will be delivered by farmers to the crushing mills (or conversely, the crushing mills will demand fewer soybeans from farmers). Or an increase in production of margarine would call for more soybean oil, and therefore greater quantities of soybeans for crushing.

To introduce the effects of stocks and imports of the processed products, the quantities of oil and of cake and meal produced were valued at their average primary market price 4/. This total value of joint products produced (on a wholesale basis) was compared with the value of soybeans sold for crushing (on a farm-level basis). The resulting ratio (farm value of soybeans crushed to wholesale value of oil and of cake and meal produced) was then used to reduce the wholesale values of imports and stocks of oil and of cake and meal to their

4/ The primary market price is the price at the first transaction level, frequently described as the wholesale price.

Figure 1
equivalent values at the farm level. These farm-value equivalents were then added to the original farm values of soybean imports and stocks. Furthermore, the farm value of the processed products added to the supply side was also added on the distribution side to the value of soybeans sold for crushing. Consequently the total value of soybeans used in a year then reflected shifts in supplies of processed products as well as in soybeans as such.

Inclusion of the utilization of processed items in the index was accomplished as follows. Again, referring to figure l, we note that soybean oil is used for food products (margarine, shortening, and other such products) and for nonfood items (such as soap and drying oils) and that some quantities are exported. Cake and meal are used for edible and inedible uses and exported. To express this level of final consumption of soybeans in processed form in terms of equivalent farm values, the consumption data for each industry or use were multiplied by the appropriate primary market price for soybean oil or meal to develop a total value of consumption. A percentage distribution by end use was then developed for this total consumption value, and the percentages obtained were applied to the farm value of soybeans crushed (developed above) to get farm-level aggregates reflecting the value of each of the final uses of the soybeans crushed in a given year. These aggregates were then summed into food, nonfood, export, and other uses.

The uses to which exported commodities are later put cannot be reported by the Bureau of the Census, which derives its data from information on ships' manifests. However, the problem of allocating exports and shipments between food and nonfood categories was relatively simple for most conmodities for most countries, on the basis of general information on types exported to particular countries. For example, linseed oil is considered to be inedible by most countries to which we have shipped it, but not all. Although we use corn in processed food commodities as well as for feed, practically all of our exports of corn are for feed. In such instances, special information concerning the commodities was utilized in making the allocations.

The next step was to add the aggregates of direct soybean uses (feed and seed used on farms where grown and quantities sold to other farmers for feeding) obtained earlier, to the food, nonfood, export, and other categories for processed items indicated above. The total aggregates for each of these categories were then compared with the total value of soybeans utilized each year in all forms. The result of this computation was the percentage utilization of soybeans in a given year. All values are in terms of constant dollars. This procedure was used in order later to show changes in quantities from year to year rather than changes in value arising from price changes.

Similar computations were made for each of the farm products included in the index. The index as published, however, shows distribution to broad categories only. Although the estimates for individual industries are not precise, the totals for broad classes of utilization are regarded as sufficiently reliable for analysis of shifts in utilization.

The utilization data for each year present an average for the year's moving economic picture. In order to compare one year's picture with that of another, yearly information was expressed in terms of ratios to utilization in the base period, 1947-49. For this purpose, a fixed-base weighted-aggregate type of index was constructed, using the formula 5/:

$$
I=\frac{V_{-}}{V_{n}}
$$

where:
$\mathrm{V}_{1}=$ the total value in constant 1947-49 dollars of agricultural commodities (both those used in unprocessed form and the equivalent farm value of processed products) utilized in a given year.
$\mathrm{V}_{0}=$ the average total value in constant 1947-49 dollars of agricultural commodities (both those used in unprocessed form and the equivalent farm value of processed products) utilized in the base period 1947-49.

By substituting in the numerator of the formula the appropriate value aggregates for each source of supply and channel of distribution in terms of the values of the farm commodities, the indexes of percentage of base-period utilization were derived for each category (that is, farm production, imports and shipments, net stocks, nonfood use, food use, military takings, exports and shipments, and Department of Agriculture transactions; see table 2). As prices were held constant, it is evident that this type of index shows the change in total value between a given year and the base period caused by changes in quantity and shifts among end uses.

For the index base period and for price-weighting purposes, 1947-49 replaces 1935-39, which was used as the base for the old utilization index. The change to a more recent period was made in accordance with the recommendation of the Office of Statistical Standards that all revised Federal index numbers be put on a postwar base representing the average of the 3 years 1947, 1948, and 1949. It should be stressed that the adoption of a base period does not necessarily signify a "normal period"; it merely serves as a convenient measuring point. Adoption of fixed base-period prices freezes into the index-weighting structure the economic relationships that existed in the period selected. If the

5/ This is actually the familiar Laspeyres' formula for quantity where the p's are farm prices and the q's are quantities of farm products (in unprocessed form). However, because this index includes the equivalent farm values of processed items, it was necessary to modify the customary symbolism.
base-period price weights used to express values in constant dollars were $\$ 1.00$ for commodity A and $\$ 3.00$ for commodity B, a unit change in the quantity utilized of $A$ would influence the total movement of the index only a third as much as a unit change for B. But 10 years later, because of shifts in consumer demand commodity A might sell for $\$ 3.00$ and commodity $B$ for $\$ 1.00$. The effect of a unit change in $A$ is now three times as important in the economy as a unit shift in B. But, as the index was constructed with base-period prices as weighting factors, a unit change in A still has only one-third the effect on the total movement of the index as a change in $B$.

As these price relationships change over time, comparisons among several years that are remote from the base period are not as valid as direct comparisons between specified years and the base, which give relatively accurate approximations of trend. So far as 1947-49 more closely represents the economic relationships existing at present than does 1935-39, it is to be preferred to the more distant date. After careful testing of the results of linking to prewar price weights for prewar years, it was concluded that the differences in the estimates for the index were insignificant and did not merit the extensive statistical computations that would be involved.

Prices used in combining farm production of the several commodities in the revised index were obtained by: (1) Multiplying the average midmonth prices received by farmers 6/ by the volume of monthly sales to obtain calendar-year average prices at the farm level for each commodity; and (2) weighting these annual prices by the yearly production of each commodity to get the average 1947-49 farm prices. The use of monthly sales weights permitted each monthly price to influence the yearly price according to the relative importance each month's marketing returns bore to annual marketed value. By weighting each of these annual prices by the quantity of the commodity produced in the given year, an allowance was made for year-to-year changes in the value of farm production not marketed (that is, supplies retained on farms for home consumption, feed, or seed). All quantity data for processed items were combined by use of weighted-average 1947-49 wholesale prices. I/ Weighting factors used were the annual production of the processed items for each of the 3 base years. If available, price data used were United States annual averages; otherwise they were annual averages at the most representative markets. In the unrevised index, price weights for the 1935-39 base period were 60 -month simple arithmetic averages of prices received by farmers.

6/ Prices received by farmers for their products sold at local markets or at the point to which they deliver their products in their own conveyances or in local conveyances hired for the purpose. These prices, monthly sales, and annual production data are reported by the Department of Agriculture.

7/ As reported by the Bureau of Agricultural Economics, the Production and Marketing Administration, the Bureau of Labor Statistics, and trade papers. Wholesale prices as used here are prices at the first transaction level, that is, primary market prices.

Table 3 lists the base-period utilization aggregates and the relative importance of major commodities (including both unprocessed and processed forms) in the index in 1925-29, 1935-39, 1942-45, 1947-49, and 1952.

Imported Commodities Not Produced in the United States
For imported commodities - coffee, tea, cocoa beans, bananas, and certain tree nuts and oils - which are not produced in this country, value aggregates for total utilization were developed for the supply side $b y$ (l) using quantities of imports and average prices at the first transaction level in the United States (usually at the dock), and (2) adjusting value aggregates by the net value of stocks where reported. This utilization value was then distributed in the same way as that for items produced domestically. The unrevised index used average import prices reduced by one-third as an approximation of the comparable value at the farm level. (Import prices are prices at foreign ports where loaded.) The change to prices at the level of the first domestic transaction was made because that is the level at which imported commodities which have undergone little or no processing may be competitive with domestically produced commodities. Also, it is the point at which these commodities enter into domestic channels for processing and distribution to the final consumer. For imported tree nuts, Brazil, cashew, pignolia, and pistache, it was necessary to use the average import price because no other data were available.

Sources and Methodology of Data by Commodity Groups
The following paragraphs contain a detailed description of the handling of oilseeds in preparing this index. Practically every conceptual and statistical problem encountered in the development of the index was faced in the case of oilseeds. The handling of other commodity groups is described with less detail to avoid repetitiveness, but wherever special problems were met, their solutions are reported.

Oilseeds and Peanuts.- The value of oilseeds and peanuts utilized yearly is represented in the index by cottonseed, flaxseed, peanuts, and soybeans.

Data for cottonseed for 1924-52, showing the quantity produced, the quantity used on farms and for planting, and the quantity delivered to oil mills are reported on a crop-year basis by the Bureau of Agricultural Economics. This information was put on a calendar-year basis by adjusting for January 1 stocks at oil mills, and for calendar-year imports, exports, and shipments reported by the Bureau of the Census. Cottonseed is crushed to obtain crude cottonseed oil, cottonseed cake and meal, and cottonseed hulls. Before crushing, the seeds are delinted, thus separating cottonseed linters from the seeds. A calen-dar-year supply and distribution table was developed for each of these products. For crude oil, the Bureau of the Census report of January 1 stocks, production, and imports was used.

Table 3.- Average farm value of agricultural food products used in 1947-49 and relative importance of individual comodities in selected years $1 /$

| Commodity | :Average farm <br> : value of <br> : quantities <br> : used in <br> : 1947-491/ | Relative importance in total value $2 /$ |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | $1947-49$ | 1925-29 | 1935-39 | 1942-45 | 1952 |
|  | $\begin{aligned} & \text { Million } \\ & : \text { dollars } \\ & \hline \end{aligned}$ | Percent | Percent | Fercent | Percent | Percent |
| Cottonseed | 343 | 1.0 | 1.7 | 1.5 | 0.9 | 1.1 |
| Flaxseed | 184 | . 6 | . 9 | . 6 | . 8 | . 5 |
| Pearuts | 225 | . 7 | . 3 | . 6 | . 6 | . 5 |
| Soybeans | : 539 | 1.6 | . 1 | . 5 | 1.3 | 2.2 |
| Barley | 384 | 1.2 | 1.3 | 1.3 | 1.5 | 1.1 |
| Corn | : 4,466 | 13.5 | 16.0 | 12.9 | 14.1 | 13.8 |
| Grain sorghums | : 139 | . 4 | . 4 | . 3 | . 5 | . 7 |
| Oats | : 1,092 | 3.3 | 3.9 | 3.3 | 3.1 | 3.3 |
| Buckwheat | 9 | $3 /$ | . 1 | $3 /$ | $3 /$ | $3 /$ |
| Rice | 178 | . 5 | . 4 | . 5 | . 4 | . 7 |
| Rye | 45 | . 1 | . 3 | . 3 | . 3 | . 1 |
| kheat | : 2,428 | 7.3 | 6.5 | 6.1 | 6.9 | 6.5 |
| Maple sugar | : 5 | $3 /$ | $3 /$ | $3 /$ | 3/1 | $3 /$ |
| Maple sirup | 10 | $3 /$ | . 1 | . 1 | $3 /$ | $3 /$ |
| Honey | 40 | . 1 | . 1 | . 1 | . 1 | . 2 |
| Sorgo sirup | : 17 | . 1 | . 1 | . 1 | . 1 | $3 /$ |
| Sugarcane sirup | : 18 | . 1 | . 1 | . 1 | . 1 | $3 /$ |
| Sugarcane and sugar beets | : 542 | 1.7 | 1.9 | 1.9 | 1.5 | 1.7 |
| Fruits | : 1,058 | 3.2 | 2.8 | 3.3 | 2.9 | 3.1 |
| Tree nuts | : 79 | . 2 | . 2 | . 2 | . 2 | . 2 |
| Vegetables | : 1,765 | 5.3 | 5.1 | 5.8 | 5.4 | 5.3 |
| Potatoes | : 625 | 1.9 | 2.1 | 2.1 | 1.8 | 1.4 |
| Sweetpotatoes | : 102 | . 3 | . 5 | . 6 | . 4 | . 2 |
| Dried field peas | : 24 | . 1 | $3 /$ | 3/ | . 1 | $3 /$ |
| Dried edible beans | $:-145$ | . 5 | . 4 | . 5 | . 5 | . 5 |
| Total crops | : 14,462 | 43.7 | 45.3 | 42.7 | 43.5 | 43.1 |
| Chickens | : 1,099 | 3.3 | 2.8 | 2.8 | 3.5 | 4.2 |
| Turkeys | : 258 | . 8 | . 3 | . 6 | . 7 | 1.1 |
| Eggs | : 2,345 | 7.1 | 6.3 | 6.1 | 6.8 | 7.5 |
| Cattle and celves | : 4,332 | 13.1 | 11.3 | 12.7 | 12.4 | 12.0 |
| Hogs | : 3,898 | 11.8 | 12.6 | 11.2 | 13.5 | 13.1 |
| Sheep and lambs | : 349 | 1.0 | 1.2 | 1.5 | 1.5 | . 9 |
| Milk | : 4,886 | 14.8 | 16.3 | 17.7 | 14.9 | 13.9 |
| Total livestock | : 17,167 | 51.9 | 50.8 | 52.6 | 53.3 | 52.7 |
| Coffee | : 810 | 2.5 | 1.7 | 2.2 | 2.0 | 2.3 |
| Tea | 49 | . 1 | . 2 | . 2 | . 1 | . 2 |
| Cocoa | : 202 | . 6 | . 5 | . 8 | . 6 | . 6 |
| Bananas | 191 | . 6 | . 7 | . 7 | . 3 | . 5 |
| Tree nuts | : 61 | . 2 | . 1 | . 2 | . 1 | . 2 |
| Copra | : 125 | . 4 | . 4 | . 4 | . 1 | . 3 |
| Olive oil 4/ | 14 | $3 /$ | . 3 | . 2 | 3/ | . 1 |
| Total not produced domestically | $: 1,452$ | 4.4 | 3.9 | 4.7 | 3.2 | 4.2 |
| Total all commodities | : 33,081 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |

1 Average quantities used in 1947-49 times weighted average farm prices in those years, except for imported comodities not produced in this country. For them, prices approximately at the port of entry were used. Quantities used include food and nonfood use, additions to stocks, and exports, supplied from domestic production, imports, and withdrawals from stocks.

2/ Calculated from unrounded data.
3/ Less than 0.05 percent.
4/ In terms of olive equivalent.

On the distribution side, census reports and BAE estimates showing utilization of oil in margarine, shortening, other edible uses, soap, drying oils, other inedible industrial uses, and exports and shipments were used for most of the period. Before 1931, estimates of uses other than margarine were made. Production, imports, exports, and January 1 stocks of cake and meal are reported by the Bureau of the Census. The quantity of cake and meal used for fertilizer is estimated by the Bureau of Agricultural Economics. The residual (after accounting for disappearance as fertilizer and exports) is utilized as feed. The only data available concerning cottonseed hulls are census production figures, and January 1 stocks from 1941 to date. Imports and exports are not reported separately. For years before 1941 it was assumed that stocks remained constant because data relating to stocks were not available. There are no data on disappearance of hulls; however, their chief use is for feed. Therefore, the total quantity utilized each year was designated for feeding purposes. Production, exports, and August 1 stocks of linters are reported by the Bureau of the Census for 1924 to date. Imports have been reported. since 1936. The quantity of linter stocks on hand January 1 was estimated by adjusting the reported August 1 data on stocks for August-December production, imports, exports, and consumption. The total quantity utilized in each year was distributed to exports and the textile and allied industries (reported by the Bureau of the Census). A small quantity was destroyed each year (estimated by BAE).

Flaxseed production and July 1 stocks are reported by the Bureau of Agricultural Economics for 1924-52. Data relating to stocks were adjusted to a January l basis by taking July l stocks, adding to them production of flaxseed, and allowing for imports, exports, and crushings for July through December. The Bureau of the Census has reported imports of flaxseed for 1924 to date, while data on exports have been available only since 1942. Because this country was on a net import basis for flaxseed before World War II, very little, if any, would have been exported for this period. Distribution is to seed use (reported by BAE), to exports, and to crushings (reported by Census). The products of flaxseed crushing are crude linseed oil and linseed cake and meal. Reported data are available from the Bureau of the Census for production, January l stocks, imports, exports, and shipments of linseed oil. In addition, the Bureau of the Census also reports disappearance into food uses (margarine, shortening, and other edible purposes) and into nonfood uses (soap, drying oils, other industrial uses). The Bureau of Agricultural Economics estimates the unreported quantity used for nonfood purposes. Only data on production, imports, and exports are available for linseed cake and meal before 1950. Data on production were compiled by the Department of Agriculture for 1924-48; by the Bureau of the Census from 1949 to date. Data on January 1 stocks also were collected by the Bureau of the Census, beginning in 1950. No information is available on the use of cake and meal; but after allowing for quantities exported, the residual used was assumed to go for feed.

Supply and distribution of peanuts were compiled on a farmers' stock basis. For this purpose, cleaned unshelled nuts were multiplied by the factor 1.05 , and shelled nuts by the factor 1.43. The
quantities of peanuts imported, exported, and shipped to our territories are reported by the Bureau of the Census. The quantity crushed was reported by the Bureau of the Census for 1924-37; from 1938 to date, the Bureau of Agricultural Economics has reported it. Data on stocks have been obtained from the Bureau of the Census, the Federal Trade Commission, and the Bureau of Agricultural Economics. For 1924-38, the Bureau of the Census reported January 1 stocks at crushing mills; from 1939 to date BAE has reported January 1 figures in all commercial positions. BAE reports the quantities used for seed, feed, and farm loss, and the quantity taken by the military for food uses. The quantity of nuts available for civilian food uses was partly obtained from reported disappearance and partly estimated. Two products are obtained from peanut crushings - oil and cake and meal. Data on January l stocks, imports, and exports of peanut oil are available from the Bureau of the Census, 1924-52. Production data were reported by the Bureau of the Census for 1924-38; from 1939 to date by BAE. Disappearance in food uses (margarine, shortening, other edible) and nonfood uses(soap, drying oils, other industrial) is reported from 1931 to date. Before 193l, only data on disappearance of margarine and soap are available. Estimates of other uses were made for this period by the Bureau of Agricultural Economics. Production of peanut cake and meal is reported by BAE. Data on stocks are available from January l, 1939, to date. For earlier years, it was assumed that stocks remained constant. Information on imports is available from the Bureau of the Census for 1934 to date; information on exports from 1946. Peanut cake and meal are used chiefly for feed. After allowing for exports, the residual quantity utilized was designated for feeding.

The Bureau of Agricultural Economics reports for soybeans production, quantity used for seed, and'quantity fed on farms where produced. Since 1943, it has reported January l stocks of soybeans; previously, data on stocks were available for October 1 of each year. These data were acjusted to a January basis. The Bureau of the Census has reported imports for the entire period; data on exports have been available since 1931, and shipments to territories since 1941. Soybeans not going into feed uses, seed uses, or exported are crushed. The Bureau of the Census reports monthly crushings of soybeans. These crushings yield oil and meal or flour. 8/ Census reports production, January l stocks, imports, exports, and disappearance of oil in margarine, shortening, other edible uses, soap, drying oils, and other nonfood industrial uses. For 1924-30, it. was necessary to estimate uses in other than the soap and drying-oils industries. From 1924-48, BAE reported production of cake and meal; the Census has reported it since January 1949. No data on stocks were available before January 1, 1950;

8/ A negligible part of the soybean crop is ground whole for full-fat soy flour which contains all of the oil in the seed. In addition, lowfat soy flour is produced in crushing for oil. An allowance for low-fat soy flour was made in the supply-distribution data for soybean cake and meal.
therefore, stocks were considered as constant for 1924-49. Data on imports are available from the Bureau of the Census for the entire period; on exports since 1939. In addition to the quantity of cake and meal exported, distribution is made to nonfood industrial uses, to food uses in the form of flour, and to feed. The Bureau of the Census has reported soybean meal and flour used for industrial and food purposes since 1935 when such production became significant. The quantity of this production utilized for nonfood industrial purposes was estimated by BAE for 1935 to 1948. Beginning with 1949 the Bureau of the Census reported industrial uses separately. Since that date, the food use of meal has been compiled as the quantity of soybean meal utilized for low-fat soy flour. After accounting for these uses and exports, the residual quantity was considered the quantity used in the year as feed.

In order to trace the distribution of products made from oilseeds to their final consumption, it was necessary to make an adjustment in the oilseed data. As noted in figure l, soybeans produced on the farm were traced through to consumption in the form of oil in the margarine, shortening, soap, and other industries. Obviously, this industrial use is not the final level of consumption; the final level is the disappearance of margarine, shortening, soap, and other products containing cottonseed, linseed, peanut, and soybean oil. Therefore, data were adjusted to reflect the utilization of these end products. This was accomplished by adjusting the value of crude oil used by food and nonfood industries by the value of exports, shipments, and military and Department of Agriculture takings of processed products (margarine and shortening, for instance! so that these categories would include the crude-oil equivalent of the processed products.

Data on imports were not considered because imports of edible processed products made from cottonseed, linseed, peanut, and soybean oil are negligible, while data on imports for inedible products containing these oils could not be readily compiled. Factors were not available to convert products containing these oils into oil and seed equivalents. Therefore, estimates were derived of the value of oils which had been exported and taken by the military and the Department of Agriculture in the form of processed products by applying the percentage that yearly export, military, and Department requirements for margarine and shortening were of the total domestic consumption of margarine and shortening, and applying these percentages to the value of oil utilized in food uses. For example, if in a given year the Military Forces bought 20 percent of total margarine and shortening used, then 20 percent of the quantity of crude oils utilized for food purposes was designated as military takings. No estimates were made of nonfood military requirements because of lack of data.

It was not necessary to use this estimating procedure for most commodity groups as data on final consumption as processed products could be directly converted to an equivalent lower level of processing. To illustrate, in the case of beef, exports, imports, and military and Department of Agriculture takings of canned, dried, and frozen beef and beef products are regularly converted to a carcass-weight equivalent in estimating civilian per capita consumption. Therefore, it was only
necessary to convert carcass-weight equivalents to the basis of the farm product, as outlined in the general description of methodology.

In compiling the data for these commodities, it was not always possible to have the quantity utilized in a year (obtained by adding production and imports to January 1 stocks, and subtracting December 31 stocks) balance with the data on consumption by uses because of underor over-reporting. When the data did not balance, adjustments were made in the series that appeared to be most subject to reporting error.

Livestock. - Utilization in this country was measured in terms of the value of meat from cattle, calves, hogs, and sheep and lambs slaughtered annually and the major part of the value of other products derived from these animals.

For the purpose of this index, production of livestock was considered to be the total live weight of animals slaughtered in each year. The major product that results from the slaughtering operation is meat. Other products include hides, skins, fats, oils, and other lesser items as glue, gelatin, boneblack, blood, hair, and bristles. The procedure followed was to establish the farm value (that is, the live weight of hogs or other livestock slaughtered, multiplied by the average price per pound received by farmers) for each type of animal utilized in a year, and to adjust this value for the effect of changes in stocks and imports of the major products processed from the animal carcass, reduced to equivalent farm values, to derive total utilization. 9/ The distribution of this value to food, nonfood, export, and other uses was then accomplished by the same method as outlined above for illustrative purposes.

Because of the complexity of allocating separately the values from certain processed products (that is, tallow, oleostearine, and other fats and oils obtained from both cattle and calves) to either the live value of cattle or of calves, these animals have been treated together in the index. The total live weight of cattle and calves slaughtered, both commercially and on farms, has been reported annually since 1935 by the Bureau of Agricultural Economics. For 1924-34, slaughter was estimated on the basis of the average relationship existing from 1935 to 1951 between slaughter weight and the weight of beef and veal produced, that is, the 1935-51 average dressing percentage. Data on supply and utilization of beef and veal are published regularly by the Bureau of Agricultural Economics. As data on production and consumption of beef and veal are on a carcass-weight basis, they exclude edible offals. No established reports are available as to production

[^1]of offals; accordingly, estimates of production for edible beef and veal offals were derived as equivalent to 6.7 percent of the dressed weight of beef and 10.7 percent of veal. The quantities of stocks on hand January l, the quantity of offals exported and imported, and the quantity taken by civilians and by the military forces are compiled by the Bureau of Agricultural Economics as aggregate figures representing all edible offals (beef, veal, pork, and lamb and mutton). These data were distributed to each meat category in the ratios that offals of each type of meat were to total production of edible offals in each year for 1924 to date.

The number of cattle hides and calfskins produced was estimated as the quantity of cattle and calves slaughtered in all places plus the number of animals dying each year. This method slightly overestimates production because not all hides and'skins are recovered for further processing into leather. January l stocks of cattle hides were reported by the Production and Marketing Administration of the Department of Agriculture from 1924 until discontinued in 1946. No data are available on calf and kip skins; therefore, stocks were considered as remaining constant from year to year. The quantity of cattle hides and calf and kip skins ultimately procured by the military in the form of shoes and leather equipment was derived from trade data 10 /and from BAE estimates. All supply and distribution data for the remaining items processed from cattle and calves, and included in this index - edible tallow, inedible tallow, oleostearine, oleo stock, and oleo oil - are reported by the Bureau of the Census. January l stocks of oleo stock currently are not available; therefore, they were considered as unchanged. Data on imports of edible tallow are not available prior to 1936 while imports of oleo stock are not reported separately. Because imports of edible tallow are generally small and the greater part of cleo stock produced is exported, little error is introduced into the index by this noncoverage. Exports are available for these fats and oils from 1924 to date. Data on utilization were grouped into food uses (margarine, shortening, and other edible uses) and nonfood uses (soap, drying oils, and other industrial uses). Prior to 1930, these series were not fully reported and when necessary, estimates were made based on relationships prevailing in succeeding years.

Live-weight slaughter data for lambs and sheep were obtained similarly to those for cattle and calves. In addition, the supply and distribution tables for lamb and mutton (carcass-weight equivalent), for edible offals, and for sheep and lamb skins were developed from the same sources and by the same methods as outlined for beef and veal. Production of edible offals was derived as equivalent to 5.1 percent of the dressed weight of lamb and mutton. Data on stocks are not available for sheep and lamb skins; therefore, utilization in each year was estimated as equivalent to production plus imports. In addition to the meat, offals, and skin obtained from the slaughtered and Shoes, Blue Book of the Leather Industry. Ed. 30. 1948.
animals, a quantity of wool is recovered. This is called pulled wool and is distinguished from shorn wool which is obtained from shearing live animals.

The only data available for pulled wool are production figures from 1924 to date on a grease basis. 11/ Data pertaining to stocks, imports, exports, military takings, and consumption by domestic mills include both pulled and shorn wool. In order to develop separate supply and distribution tables for pulled and shorn wool (the value of shorn wool was not imputed to the farm value of lambs and sheep as was pulled wool; rather production of shorn wool was treated as an independent agricultural product similar to corn, cotton, or wheat), the first step was to ascertain on a scoured basis 1l/ the ratio of production of pulled wool to total production of wool. These data are reported by the Bureau of Agricultural Economics. This ratio was then applied to January l stocks of domestic apparel wool and to the quantities of wool exported (both reported by the Bureau of the Census) to obtain estimates of pulled wool stocks and exports. Data on stocks include quantities held by dealers, manufacturers, and the Federal Government, but exclude any stocks that may be on farms. This information is available only from 1936 to date; stocks were considered as unchanged prior to 1936. Quantities of foreign wool were excluded from all calculations of pulled wool as imports of this wool are negligible, if any. Military takings of pulled wool were derived by expressing the total quantity of wool used by the military each year, estimated for use in this index, as a percentage of the total wool used annually. These percentages, when applied to the total quantity of pulled wool, give a rough approximation of military takings of pulled wool. Mill consumption for civilian use was derived as a residual after allowing for exports of pulled wool and military takings. All data were converted to a greasy-shorn equivalent in order to avoid duplication with the supply and utilization of shorn wool.

Data on live-weight hog slaughter, pork (carcass-weight equivalen't excluding lard), and edible offals were compiled in the same way as those for cattle, calves, and lambs and sheep. Edible pork offals were derived as 6.7 percent of the dressed hog weight, excluding lard. In addition to utilization of the carcass as meat and offals, an important part of the slaughtered animal is utilized as lard. Data on use of lard were grouped into margarine, shortening, and other edible uses, and into soap, drying oils, and other nonfood uses. All necessary data were available for 19"4-52.

In cormpiling the data for exports, imports, military takings, and Department of Agriculture activities, the carcass-weight equivalents of

11/ Grease wool is wool as taken from the animal, and before any scouring preparatory to manufacturing. Scoured wool is wool that has had the grease removed by scouring. for conversion purposes, luU pounds of greasy shorn wool are equivalent to 44 pounds of scoured wool, and 100 pounds of greasy pulled wool are equivalent to 75 pounds of scoured wool.
canned and dried beef, veal, lamb and mutton, and pork were included where possible.

Poultry and Eggs. - The processing of chickens, turkeys, and eggs for food use does not generally produce byproducts of appreciable value. Accordingly, as processed poultry (canned) and eggs (dried and frozen) are regularly converted to unprocessed equivalents, the measuring of their supply-utilization in terms of farm values was comparatively simple. Multiplying the quantities in terms of farm weights in each supply and distribution category by the average price received by farmers in the base period gave the value for each source of supply and channel of distribution. These values were then combined with the values for other farm commodities to obtain the supply-utilization index. For use in this index the quantity of eggs used for hatching was designated as a nonfood use. In addition to eggs for hatching, the nonfood category also includes quantities that were spoiled or wasted in 1944, 1945, and 1948-50 in connection with Government price-support programs. Other than this spoilage and wastage, no data are available concerning the nonfood uses of eggs. As a result, the relatively small quantities of eggs used for culture media, medicinal purposes, photographic emulsions, adhesives, tanning and finishing leather, and other nonfood purposes were not taken into account. Therefore, the food use is slightly overstated.

Dairy Products.- This group is represented in the index by the supply and distribution data for total milk fat and total nonfat milk solids. The use of these bases permitted the conversion of all manufactured dairy products (butter, cheese, ice cream, condensed and evaporated milk, etc.) into their unprocessed milk-solid equivalents. Supply and distribution tables published by the Bureau of Agricultural Economics were used.

Although the principal nonfood use of milk fat (fed to calves) is a reported figure, the quantity of nonfat milk solids used for nonfood purposes was derived as a residual figure. This slightly overstates nonfood use because, in addition to the quantity of nonfat milk solids going into feed and industrial nonfood uses or wasted, reliable estimates could not be made for some food uses.

For the entire index period total fat and nonfat milk solids-data were combined and included in the index by multiplying each supplyutilization category by the estimated weighted base-period average price received by farmers for milk solids. That price was derived by dividing the farm value of milk produced by the total solids equivalent of milk sold and used for farm household use, plus the solids equivalent of whole milk fed to calves. Thus, the total price was attributed to milk solids only.

Fruits. - To measure the supply-utilization of fruit at the farm level, data on production of fruit were adjusted for changes in stocks and for imports to obtain the total quantity of fruit used annually. This quantity was then apportioned to the various disappearance categories (for example - food use, nonfood use, exports, and shipments).

Farm production of fruit consists of the total quantity of fruit 12/ harvested each year. Part of this production is consumed in its unprocessed, fresh form. The rest is processed into dried, canned, and frozen fruits and juices and subsequently consumed in those forms. Data on production of the processed items were not used.in construction of the index because they duplicate output of fruit measured when harvested.

Supply and distribution tables were developed for processed fruits and the data put on comparable fresh-equivalent bases by the use of conversion factors so that quantities of dried, canned, and frozen fruits and juices in each supply and distribution category could be aggregated with quantities of fruit sold in fresh form. As an example, total imports of fruit, on a fresh basis, consist of the quantity of fruit imported in fresh, unprocessed form plus the quantities of imported dried, canned, and frozen fruits and juices converted to fresh, unprocessed equivalents. Canned fruit was converted to a fresh-equivalent basis by using the factor 1.2 ; canned fruit juices (excluding frozen juices) by using a variable factor which ranged between 1.9 and 2.4; frozen fruits (including frozen juice concentrates) by using 1.1 through 1945 and a variable factor ranging from 1.2 to 3.8 from 1946 to date; and dried fruits by using the factor 3.6. All conversion factors were developed by the Bureau of Agricultural Economics. Average factors were used for the entire index period for those items for which the variation in conversion ratios from year to year was extremely small.

Similarly, stocks, exports, shipments, Department of Agriculture transactions, military takings, and nonfood uses of canned, frozen, and dried fruit items were converted to fresh equivalents and added to the quantity of unprocessed, fresh fruit falling into each of the above categories. Domestic civilian disappearance of fruit for use as food (in terms of fresh fruit as produced at the farm level) was derived as a residual. Nonfood use of fruit, for the purpose of this index, was defined as the quantity of fruit used in the brandy and still-wine industries. These data are available from the Bureau of Internal Revenue from 1938 to date. Data for 1924-37 were estimated by using the linear relationship of the quantity of fruit, juices, and concentrates used in production of still wine and brandy with total production of still wine and brandy.

12/ Production having value (excludes quantities not harvested because of economic conditions) of oranges, tangerines, grapefruit, lemons, limes, apples, peaches, pears, grapes, cherries, plums, prunes, apricots, figs, olives, avocados, dates, cranberries, pineapples, persimmons, pomegranates, and strawberries. As adequate production data are not available for berries, the supply and distribution of berries were excluded except for small quantities appearing in data on exports and imports. Bananas were excluded because they are not produced domestically. They are included in a separate index group of commodities not produced in this country.

The quantity obtained for each category was then valued at the average farm price 13/ for fruit in the base period to get the value aggregates to be used in the total supply-utilization index.

Tree Nuts.- Domestic production of tree nuts includes almonds, filberts, pecans, and walnuts. 14/ No data on stocks are available for tree nuts. Therefore, imports $\overline{o f}$ these four commodities were added to production data to obtain an estimate of the quantity consumed yearly. This quantity was distributed to exports and military takings and the residual was designated as domestic civilian disappearance. Because data for this index were measured in terms of the farm level, the supply and utilization of tree nuts was compiled on an "in-the-shell" basis. Shelled nuts were converted to an equivalent unshelled basis by the use of average conversion factors.

Vegetables.- As the first step in measuring the supply-utilization of vegetables at the farm level, all commercial production sold for fresh use and for processing and the rough approximation of total production of farm, rural nonfarm, and urban gardens were totaled to obtain the quantity of vegetables $15 /$ produced yearly for consumption in fresh, canned, frozen, and dried form.

Data on stocks, exports, imports, military procurement, and Department of Agriculture takings of processed vegetables were converted to fresh equivalent basis by using average conversion factors. They were then used to adjust the quantities supplied and distributed in those categories as fresh vegetables. The residual of all vegetables remaining after adjustments for the above categories was considered to be civilian consumption. Each category was valued at the average weighted price received by farmers in the base period for the fresh vegetables listed below to derive the value aggregates for the index.

Potatoes, sweetpotatoes, dry edible beans (cleaned basis), and dry field peas (cleaned basis) were handled similarly. Data used were BAE supply and distribution tables. Nonfood uses of these commodities were seed, feed and waste, industrial alcohol, alcoholic beverages, starch, flour, and glucose.

13/ The 1947-49 average weighted farm price of the 22 fresh fruits enumerated above.

14/ Data on Brazil nuts, pignolia, pistache, chestnuts, cashews, an $\overline{\text { d }}$ miscellaneous tree nuts, for which statistics on domestic production are not available or which are not produced domestically, were treated separately in the group of commodities not produced in this country.

15/Artichokes, asparagus, lima beans, snap beans, beets, broccoli, Brussels sprouts, cabbage, cantaloups, carrots, cauliflower, celery, sweet corn, cucumbers, eggplant, escarole, garlic, honeyballs, honeydews, kale, lettuce, onions, green peas, green peppers, pimientos, shallots, spinach, tomatoes, watermelons, and miscellaneous minor vegetables.

Feed Grains.- Corn, barley, oats, and sorghum grains are customarily classified as feed grains because their primary use is for livestock feeding, with food use of secondary importance. The supply-utilization of these commodities in terms of farm values includes both the grainequivalents of products processed from grain as well as the supply-disappearance of the grains as such. For the purpose of this index, supplyutilization tables for barley, corn, oats, and grain sorghums showing the movement of grain only were used. To these basic tables were added the grain-equivalents of products processed from these grains. Grainequivalents were obtained by using average conversion factors developed by the United States Department of Agriculture. 16/

To illustrate, the total number of bushels of corn produced for all purposes (grain, silage, fodder, hogged-off, grazed.) was noted for each of the index years. To these production data were added imports of grain corn plus the difference in stocks of corn between January $l$ and December 31. The total was the quantity of corn utilized during the year. As it was necessary to cover the entire use of corn in all its unprocessed and processed forms, allowances were made for processed corn products made by the corn-grinding industries. These industries are the wet-process industry which produces cornstarch, sugar, sirup, dextrins, oil, gluten feed and meal and corn oil meal, and the dryprocess industry which produces breakfast foods, cornmeal, flour, hominy grits, and flakes. Conceptually, the net changes in stocks and imports of processed corn products should be converted to grain-equivalents and added to the supply side of total utilization. However, data on stocks were not available for processed corn products and imports were negligible except for cornmeal. Accordingly, only imports of cornmeal were converted to a grain-equivalent basis and added to the supply side of total utilization.

On the distribution side of the index, the total quantity of corn utilized in a year was reduced by the quantity of corn used for seed and by commercial and Department of Agriculture exports of grain corn. 17/ Nex't, each product produced by the corn-grinding industry was converted to its grain-equivalent by applying the appropriate conversion factor.

16/ See United States Department of Agriculture, Production and Marketing Administration publication. Conversion Fiactors and Weights and Measures ior Agricultural Commodities and Their Products. Washington, D. C. May 1952.

If/ For commodities other than feed grains and lood grains, jepartment of Agriculture transactions were handled in terms of net purchases for export, that is, deliveries made through the Department for export abroad adjusted by the net annual change in stocks held by the Department. For grains, Department transactions were traced only in terms of deliveries because of the nature of the grain-support program. Accordingly, for these i'cems purchases were assumed to equal deliveries in each year. On the other hand, changes in stocks of flour held by the Department of Agriculture were taken into account.

The grain-equivalents of the processed products were then classified into the quantities used for domestic food and nonfood purposes, the quantities exported commercially and by the Department of Agriculture, and the quantities taken by the military. In addition, the grain equivalent of corn not marketed but used in the farm household for food as well as the quantity of corn used in the alcohol and distilled-spirits industry (classified here with nonfood uses) were added to the food and nonfood categories. The sum of all these reported food, nonfood, export, and other uses was subtracted from the total utilization figure developed from the supply side, to obtain a residual figure. This residual was the net quantity of grain corn used as feed. Farm-level aggregates for each category to be used in the supply-utilization index were obtained by multiplying the quantities obtained above by the weighted average price received by farmers for corn in 1947-49.

Food Grains. - The food grains consist of buckwheat, rice, rye, and wheat. The supply-utilization of these commodities, with the exception of wheat, in terms of farm-level values was developed as outlined above for feed grains.

But this procedure does not take into account the millfeeds produced in processing grain, which are subsequently used for feed. After studying for the base-period years 1947-49 the value of production of each of the grain millfeeds in relation to the value of the grain products utilized, it was decided that an allowance for millfeeds would be made for wheat only. For the rest of the grains, an allowance for the nonfood use of millfeeds was considered to be insignificant in the total supply-utilization picture.

As the first step in measuring the supply and utilization of wheat and wheat products, in terms of farm-level equivalents, production of wheat was added to imports of wheat. 18/ This total was then adjusted for changes in wheat stocks to derive the total quantity used annually. This quantity was used for seed, by the industrial alcohol and alcoholic beverage industries, for commercial and Department of Agriculture shipments, by the military, for domestic processing into flour, millfeeds, and wheat cereals, and the residual was designated as used for feed.

Using supply and distribution tables for wheat flour, 19/ wheat cereals, and wheat millfeeds, each of the categories (production, imports, exports, food and nonfood use) for flour, cereals, and millfeeds was multiplied by the pertinent average wholesale price in the

18/ Imports of wheat for grinding in bond (free) and imports for grinding and export to Cuba were excluded because data for the quantity of wheat processed and data for production of flour were to represent supplies available to the domestic economy. This required a similar adjustment in the export data.
19/ Including the flour equivalent of macaroni, spaghetti, semolina, bread, biscuits, cakes, and crackers.
base period to obtain value aggregates in terms of constant dollars. These value aggregates for processed wheat products were then deflated to equivalent farm values by the process outlined in the section on general methodology.

Sugar and Sirups. - The sugar and sirups group is represented in this index by sugarcane and sugar beets, by the products resulting from their processing - industrial molasses, edible molasses, refined cane and beet sugar, refiners' sirup, molasses beet pulp, dried beet pulp, and moist beet pulp - as well as honey, sugarcane sirup, sorgo sirup, maple sirup, and maple sugar.

The production of sugarcane and sugar beets was distributed to seed use and to the quantity going to processing mills. No data on stocks of unprocessed items are available and imports of sugarcane and sugar beets are negligible. Sugarcane generally is crushed at the mill to produce raw sugar. 20/ This quantity of raw cane sugar is then augmented by imports of raw cane sugar to make up the total supply of raw sugar. Some of the cane sugar is used in this raw form, but the greater part moves to refineries to be processed into refined sugar. But in the case of beet sugar, the mills take the sugar beets delivered from farms and process them into refined beet sugar. For the purpose of this index, all data for raw cane were converted to a refined basis to enable cane sugar to be aggregated with beet sugar as data on disappearance do not distinguish between the two kinds of sugar.

The total quantity utilized on a refined basis was derived by adding imports for consumption and shipments from our Territories to the cane and beet sugar produced from domestic sugarcane and sugar beets and adjusting for stocks. This utilization was distributed to tobacco, alcoholic beverages, pharmaceutical, educational, and other nonfood uses; to commercial exports and shipments; to Department of Agriculture transactions; and to quantities taken by the military. After accounting for these uses, the residual was designated as the quantity of sugar used domestically by civilians. Most of these data are published by the Bureau of Agricultural Economics and the Production and Marketing Administration. Sugar used in tobacco is reported by the Bureau of Internal Revenue while alcoholic beverage and other nonfood uses of cane and beet sugar were estimated.

In the processing of sugarcane and sugar beets industrial molasses 21/, edible molasses, molasses beet pulp, dried beet pulp,

20/ Raw sugar is the juice extracted from sugarcane and processed until it is in crystalline form, containing approximately 96 percent sucrose. Refined sugar is raw sugar after additional processing to yield virtually 100 percent sucrose. Generally, 100 pounds of raw sugar yield 93.46 pounds of refined sugar. No allowance was made for the bagasse and sugar-beet tops produced in processing sugarcane and sugar beets because production data for them were not available.

21/ Industrial molasses is a term applied to those types of molasses that are used primarily for purposes other than human consumption.
moist beet pulp, and refiners' sirup are produced. Supply and distribution tables were developed for each of these commodities and they were converted to a farm-level equivalent by means of the procedure described in the general section on methodology.

The remaining sugar and sirup products included in this index honey, sugarcane sirup, sorgc sirup, maple sirup, and maple sugar - are reported in terms of farm-equivalents. Data on changes in stocks, production, and imports were totaled to obtain the quantity utilized yearly. After allowing for the quantities exported, the residual amount was considered to be used for food. No allowance was made for military or Department of Agriculture takings for these commodities, except in the case of honey. The sirups taken could not be identified as to type and the quantities concerned were relatively small.

## Production

The Crop Reporting Board of the Bureau of Agricultural Economics is the central fact-collecting and estimating agency for current agricultural statistics, including those of production. The data on fish are collected by the Fish and Wildife Service, Department of Interior.

The present crop reporting service has developed gradually since establishment of the United States Department of Agriculture more than 90 years ago. 22/ The Crop Reporting Board was organized in 1905 to review all State crop and livestock reports and to issue national reports. Significant improvements in the reporting system were made just before World War I and in 1923 and 1924. Fact-collecting and estimating are carried on through the offices of Federal agricultural statisticians located in 41 States. Three of these serve more than one State, one serving the six New England States. These offices obtain much of their current information through the cooperation of some 750,000 voluntary reporters. These reporters are chiefly individual growers reporting for their localities or their own farm operations but they include also many local merchants, handlers, storers, and processors of agricultural commodities, assessors, and other State and local officials. An important characteristic of all data for this country is the many sources from which statistics are drawn to check the basic data received from the producers. These checks have been developed over a period of years so that even when the sample is small, a high degree of reliability is attained.

Historical data on annual national production of most of the major food commodities are reasonably adequate for the last 30 years. Information for years before 1924 is much less satisfactory. It is described in detail in the commodity sections which follow.

22/ See U. S. Dept. of Agr. Misc. Pub. 703, The Agricultural Estimating and Reporting Services of the United States Department of Agriculture, issued December 1949, for a more detailed description of the crop and livestock reporting system.

The detailed estimates of food production are illustrated by the mass of data in the annual publication of the Department, Agricultural Statistics 23/. Estimates of food production are based on: (1) Data from the censuses of agriculture which provide benchmarks every 5 years; (2) the Crop Reporting Service for interim annual and for some seasonal information; and (3) the Market News Service for day-to-day information. Briefly, the Department of Agriculture has good historical records, by States, of acreages, yields, production, and prices of major crops, of livestock movements, livestock production - including annual estimates of the lamb and calf crops and semiannual estimates of the pig crops and number of animals on feed as of a given date each year.

To fill in gaps in information considered essential during World War II, certain special surveys were made. These included Bureau of the Census surveys of the packs of processed fruits and vegetables and Bureau of Agricultural Economics surveys of nonfederally inspected wholesale and retail slaughter. The former work has since been taken over by the National Canners Association, but the latter has been continued.

Among the types of production data still lacking are information on both rural and urban home gardens - their number and size, and the total production and. value by crops; local fish catch and game kill; noncommercial production of apples (forbidden by statute); nonfarm production data on milk, eggs, and poultry; production of ducks and geese, concerning which there are only some scattered census data; estimates of acreage and production of quinces and small fruits, other than cranberries and strawberries; regular and uniform reporting of the number and age of fruit and nut trees by varieties (lack of which prevents forecasting marketing shifts); and wholly comprehensive estimates of total production of vegetables for sale, including market gardens for which census data are still somewhat incomplete. No annual data are available on the dry milling of cereal products. Information on wet milled products is available only from trade associations. Check data, such as receipts of poultry and eggs at primary receiving plants and at principal markets, cover too small a part of total production to give completely satisfactory checks on production estimates of many commodities. Information on nonfederally inspected production of canned meat and on processing of meat, by type, is lacking. Furthermore, with the exception of wheat and corn, there are only scattered data by counties, collected by some States, on acreages, production, and value of and income from agricultural products with food uses.

With the mass of data on production of the multitude of agricultural products to deal with, the use of overall measures or indexes is necessary. Certain of these measures were available at the beginning of World War II. They included the index of the volume of agricultural production for sale and farm-home consumption, with breakdown by types (described below); and the indexes of prices received and paid by farmers. During the war, a gross farm-production index and a farm-output
index were developed by f’arm-management specialists. 24/
Index oI Voiume of Fiarm Narketings and Home Lunsumption 25/
l'he index of the volune of larm marketings and home consumption is a new set of index numbers designed to summarize changes in quantities included in the commodity elements of realized gross farm income. It covers all commodities included in gross farm income except those few that are estimated on a value basis and for which no information as to quantity is available. It includes quantities of farm products sold by farmers and also quantities consumed directly in farm households on farms where grown. The latter are usually referred to collectively as "home consumption."

Although measurement of the physical-volume factor underlying gross income is the main purpose of the index, it may serve other purposes as well. Specifically, the major subindex for food products serves as a measure of changes in food production on farms as indicated by farmers' sales and home consumption. The food index combines all farm products used primarily for food, and represents about threefourths of the total index in terms of commodity coverage. (See tables 4 and 5.)

The new index replaces the previously used index of "farm production for sale and home consumption." It differs from the old index as follows: (1) The base period is shifted from 1935-39 to 1947-49; (2) more up-to-date price weights (1947-49) are used for the period since 1939; (3) the commodity coverage is increased; and (4) crops sold or consumed in the calendar year are included regardless of when they were produced. The old index of production for sale and home consumption included crops sold or consumed from the given year's production, although some of the sales and consumption actually extended into the next calendar year.

The new index of marketings and home consumption also differs in concept, though not generally in commodity coverage, from the index of farm output. However, the main difference is in year-to-year timing, for both indexes reflect long-run changes in farm production for human use. The farm-output index covers total production in the calendar year, including changes in farm inventories as well as marketings and home consumption. In years when farmers sell or consume more than they produce, the marketings-and home-consumption index tends to be higher than the farm-output index; and conversely, it tends to be lower in years when farmers are building up their inventories.

An important aspect of this difference with respect to inventories is in the treatment of feed crops. The crop component of the farm-output

24 / Barton, Glen T., and Cooper, Martin R. Farm Production in War and Peace. U. S. Bur. Agr. Econ. F.M. 53, 85 pp. 1945.

25/ Prepared by Ernest W. Grove, Bureau of Agricultural Economics.

Table 4.- Volume of farm marketings and home consumption: 1910-52 1/


1/ For items included in each group, see table 6.
2/ Includes peamuts; excludes cottonseed.
3/ Includes dry edible beans, dry field peas, mang beans, potatoes, and sweetpotatoes.
4/ Excludes peamuts.
5/ In addition to groups shown includes "miscellaneous crops."
6/ Includes "miscellaneous livestock products" in addition to groups shown here.
7/ Preliminary.

Table 5.- Total and per capita volume of farm marketings
and home consumption, 1910-52
(Index numbers: $1947-49=100$ )


[^2]index credits farm-produced feed in the year in which it was produced, and the livestock component is in terms of "product added" after a deduction for feed consumed by livestock. But the marketings-and homeconsumption index includes only feed sold in its crop component and credits other feed indirectly in the form of livestock in the year the livestock is sold or consumed - which is usually the year following that in which the feed was produced. This obviously affects comparability of the separate crop and livestock components of the two indexes, but on an overall basis it is merely a special case of the major difference with respect to inventories. The farm-output index reflects net increases or decreases in numbers and weight of livestock on farms and increases or decreases in stocks of farm-produced feed; the marketingsand home-consumption index excludes both. 26/

In short, the farm-output index•measures the volume of farm production when it is produced, whereas the new index reflects it only as it enters the marketing system in the form of sales by farmers or as direct consumption in farmers' households. But because of this characteristic of the new index, it is the more suitable one to use in relation to data on consumption.

The index is calculated by the familiar weighted-aggregate method in which the quantities for each year are multiplied by fixed prices as weights and the price-quantity aggregates for individual years are then expressed as percentages of the average price-quantity aggregate in the base period (1947-49). The price used as the weight for each commodity is itself a weighted average of prices during several calendar years in which the average price reported as of the middle of each month in each State is weighted by the quantity sold during the month in that State. The same price weight is used for marketings of a commodity and for the quantity, if any, used as home consumption. 27/ (See table 6 at the end of this section.)

The old index of production for sale and home consumption used 1935-39 average prices as weights for 1910 to date. The new index uses them for 1910-39 only, and adopts average prices for 1947-49 as weights for subsequent years. The 1910-39 price-quantity aggregates based on the older weights have been adjusted or "spliced" to the levels indicated by the newer weights on the basis of overlapped calculations for 1940.

As the index is constructed primarily as a measure of changes in physical volume associated with changes in realized gross farm income,

26/ Other less important differences between the two indexes are discussed in chapter 6, Production Measures, of the forthcoming Bureau of Agricultural Economics Statistical Handbook. This chapter also contains a more complete description of the new index of marketings and home consumption than is provided here.

27/ For a discussion of the price data and their adequacy, see chapter 1, Prices Received, in the forthcoming Bureau of Agricultural Economics Statistical Handbook.
commodities for which quantity data are not available for the whole period covered by the index have simply been introduced into the pricequantity aggregates in the year in which they were first included in gross farm income - or dropped out in the year in which they disappeared from gross farm income. In other words, no "splicing" was necessary to bring new commodities into the index or to drop old ones out. In most cases where this occurred, the quantities involved were actually zero or were negligible before a commodity was introduced, or had become so by the time it was dropped. 23/

The overall index of marketings and home consumption is broken down in three different ways: (1) Between crops on the one hand and livestock and livestock products on the other, with subindexes for the principal coramodity groups in each category; (2) between marketings on the one hand and home consumption on the other, with the marketings index also subdivided by commodity groups; and (3) between food products on the one hand and nonfood products on the other, with the food index also subdivided by commodity groups. The underlying data permit even finer classifications, such as a breakdown between marketings and home consumption within the food category, but these are not ordinarily published.

The following is a list of commodities or commodity groups which were omitted from the old index of production for sale and home consumption, but which were added to the new index: Honey, turkey eggs for hatching, horses and mules, broomcorn, dry field peas, peppermint, avocados, popcorn, tung nuts, bees and beeswax, dates, filberts, spearmint, limes, mung beans, persimmons, pomegranates, flax fiber, pineapples, and 33 types of legume and grass seed. The new index also includes all truck crops, both sales and farm home consumption, whereas the old index covered only the commercial production.

Still omitted from the index are: (1) Forest, nursery, and greenhouse products; (2) goats, kids, and goat milk; (3) rabbits, fur animals, and pelts; (4) ducks, geese, guineas, pigeons, quail, and pheasants; (5) boysenberries, blackberries, dewberries, blueberries, loganberries, youngberries, currants, and gooseberries; and (6) nectarines, bananas, guavas, jujubes, mangoes, papayas, pricklypears, quinces, sapodillas, kumquats, loquats, and tangeloes.

These commodities for which no quantity data are available are included in gross income. But altogether they account for only 3 percent of the commodity total included in realized gross farm income, the overall coverage having been increased from 94 percent of gross income in the old index to 97 percent in the new.

28/ For a description of the sources and methods used in estimating the quantities included in the index, see chapter 9, Farm Income and Expenses, in the forthcoming Bureau of Agricultural Economics Statistical Handbook.

29/ This analysis of coverage is based on 1950 prices, quantities, an $\bar{\alpha}$ values, but it would apply equally well to other recent years.

Commodity coverage as a percentage of gross income was increased as follows in the new index as compared with the old:


Coverage is now almost complete with respect to livestock and livestock products, marketings, and food products. It is less so in the case of crops, home consumption, and nonfood products because of the continued exclusion from the index of forest, nursery, and greenhouse products. However, the statistics for products retained for home consumption show the greatest improvement; consumption of these products increased from only 77 percent in the old index to 94 percent in the new. The main reason is that truck crops produced in farm gardens are included in the home-consumption list of products.

Although the new index is a considerable improvement over the old, two difficulties could not be overcome. These were: (l) The problem of duplication resulting from interfarm sales; and (2) the problem of mixed food and nonfood uses for some commodities.

The marketings component of the index includes some interfarm sales of livestock, feed crops, and seeds. The extent of such duplication cannot be ascertained exactly, but it probably did not exceed 10 percent of the 1950 value aggregate for the combined index. Year-to-year changes in the index are affected only to the extent that purchases of farm products by other farmers are a varying proportion of total marketings and home consumption from year to year. The proportion of interfarm sales included in the index is not constant. But changes are usually rather small, and they probably make little difference on an index-number basis. 30/

The effect of duplication is even less important for the food component alone. Interfarm sales of livestock, the only duplicated food item, probably represented about 6 or 7 percent of the 1950 value aggregate for the food-products index.

The second difficulty arises from the fact that many farm products have both food and nonfood uses. For example, meat animals, included

30/ Interfarm sales are included in the index to the same extent that they are included in gross farm income. Thus, some duplication is essential if the index is to serve its primary purpose. It may, however, be a weakness in the index when used for other purposes and it is mentioned for that reason. The farm-output index is net of interfarm sales.
in the food index, have important nonfood byproducts such as hides. Soybeans and cottonseed are counted as nonfood items, although about 40 percent of their end-use value lies in the use of their oils as an ingredient of food products. Similarly, most of the food grains are used in small quantities as feed for livestock, whereas most of the feed grains are used in some measure for human consumption.

Each farm product included in the index was allocated to a food or nonfood group in accordance with its major use as indicated by endproduct values. This procedure was unavoidable but essentially arbitrary, and it may have introduced some small distortion in the food and nonfood components of the index. However, any such effect is limited by considerations similar to those mentioned above in connection with the problem of duplication. There is no ambiguity in the uses of many farm products, and secondary uses distinguishable for others are in most cases relatively unimportant. There is also a certain degree of stability in these relationships from one year to the next, and the effects of arbitrary classification are probably quite small on an index-number basis.

Table 7 contains data showing the relative importance of major commodity groups in the food subindex in selected years.

Data on Foreign Trade
Information on foreign trade in food comodities for years up to 194c, and for imports throughout the period, was taken from annual reports of the Bureau of the Census. 31/ Data in these publications were derived from documents filed by exporters and importers. Before January 1, 1934, the only data on imports were those on general imports, which included commodities entering immediately into merchandising or consumption channels plus commodities entering into bonded customs warehouses for storage. To obtain data roughly comparable to imports for consumption, exports of foreign merchandise (re-exports) were subtracted from general imports.

Beginning January 1, 1934, data on imports for consumption are available. These include commodities entering immediately into merchandising or consumption channels plus commodities withdrawn for domestic consumption from bonded warehouses.

31/ From 1909 through 1946, Foreign Commerce and Navigation of the United States; beginning with 1947 data on imports appear in Report No. FT 110--United States Imports of Merchandise for Consumption, export information in Report No. FT 410--United States Exports of Domestic and Foreign Merchandise. Annual statistics on trade with offshore Territories and possessions of the United States from 1909 through 1946 were obtained from the December issues of Monthly Summary of Foreign Commerce; beginning with 1947, Report No. FT 800--United States Trade in Merchandise and Gold and Silver with United States Territories and Possessions is the source.

Table 6.- Index of volume of farm marketings and home consumption: Average annugl farm marketings and home consumption, prices, and value aggregates in 1947-49, and percentage comparisons


Table 6.- Index of volume of farm marketings and home consumption: Average annual farm marketings and home consumption, prices, and value aggregates in 1947-49, and percentage comparisons - Continued


Table 6.- Index of volume of farm marketings and home consumption: Average annual farm marketings and home consumption, prices, and value aggregates in 1947-49, and percentage comparisons - Continued

| Commodity |  |  |  | Value | : Percentage of |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  |
|  |  |  |  | :Group | All | All <br> ormod- |
|  |  |  |  | : | cr | ities |
|  | : | : |  |  | 1,000 |  |  |  |
| Vegetables, processing : : Thousands Dollars dollars Percent Percent Percen |  |  |  |  |  |  |  |
| (for sale) continued | : | : |  |  |  |  |  |  |
| Pimientos | : Ton | 20 | 66.65 |  | 1,358 | 0.1 | 0.01 | 1/ |
| Spinach | : Ton | 80 | 44.79 | 3,574 | . 1 | . 03 | 0.02 |
| Tomatoes | Ton | 2,864 | 26.53 | 75,969 | 3.2 | . 59 | . 24 |
| Home consumption | - | --- | --- | 502,755 | 21.0 | 3.88 | 1.62 |
| Total | : | : |  | 2,388,836 | $\overline{100.0}$ | 18.42 | 7.71 |
|  | : | : |  |  |  |  |  |
| Fruits and nuts: |  |  |  |  |  |  |  |
| Grapefruit | : Box | 48,965 | . 73 | 35,891 | 3.3 | . 28 | . 12 |
| Lemons | : Box | 12,188 | 3.17 | 38,636 | 3.6 | . 30 | . 13 |
| Limes | : Box | 220 | 3.33 | 731 | . 1 | . 01 | 1/ |
| Oranges | : Box | 109,504 | 1.55 | 169,731 | 15.8 | 1.31 | . 55 |
| Apples | : Bu. | 119,726 | 2.16 | 258,608 | 24.0 | 1.99 | . 84 |
| Apricots | : Ton | 209 | 76.70 | 16,040 | 1.5 | . 12 | . 05 |
| Avocados | : Ton | 21 | 370.79 | 7,604 | . 7 | . 06 | . 02 |
| Cherries | : Ton | 219 | 201.90 | 44,256 | 4.1 | . 34 | . 14 |
| Cranberries | : Bbl. | 856 | 12.03 | 10,294 | 1.0 | . 08 | . 03 |
| Dates | : Ton | 14 | 116.29 | 1,579 | . 1 | . 01 | . 01 |
| Figs | : Ton | 114 | 53.88 | 6,127 | . 6 | . 05 | . 02 |
| Grapes | : Ton | 2,884 | 37.93 | 109,399 | 10.2 | . 84 | . 35 |
| Olives | : Ton | 45 | 158.34 | 7,060 | . 7 | . 05 | . 02 |
| Peaches | : Bu. | 66,447 | 1.66 | 110,302 | 10.2 | . 85 | . 36 |
| Pears | : Bu. | 30,320 | 1.88 | 57,001 | 5.3 | . 44 | . 18 |
| Persimmons | : Ton | 4 | 67.84 | 248 | 2/ | 1/ | $1 /$ |
| Pineapples | : Box | 5 | 4.86 | 22 | 2/ | I/ | $1 /$ |
| Plums and prunes 3/ | : Ton | 678 | 75.86 | 51,405 | 4.8 | . 40 | . 17 |
| Pomegranates | : Ton | 3 | 35.89 | 109 | 2/ | 1/ | 1/ |
| Strawberries | :Crate | 10,303 | 7.63 | 78,614 | 7.3 | . 61 | . 25 |
| Almonds | : Ton | 39 | 429.14 | 16,525 | 1.5 | . 13 | . 05 |
| Filberts | : Ton | 9 | 245.33 | 2,099 | . 2 | . 02 | . 01 |
| Pecans | : Lb. | 149,146 | . 17 | 25,355 | 2.4 | . 19 | . 08 |
| Walnuts | : Ton | 75 | 374.94 | 27,984 | 2.6 | . 21 | . 09 |
| Total | : | : |  | 1,075,620 | 100.0 | 8.29 | $\overline{3.47}$ |
|  | : | : |  |  |  |  |  |
| Miscellaneous crops: |  |  |  |  |  |  |  |
| Broomeorn | : Ton | 37 | 268.56 | 9,851 | 15.5 | . 08 | . 03 |
| Hops | : Lb. | 46,565 | . 60 | 28,125 | 44.2 | . 22 | . 09 |
| Peppermint | : Lb. | 1,607 | 5.95 | 9,563 | 15.0 | . 07 | . 03 |
| Popcorn | : Lb. | 199,813 | . 04 | 8,152 | 12.8 | . 06 | . 02 |
| Spearmint | Lb. | 620 | 4.29 | 2,659 | 4.2 | . 02 | . 01 |
| Other 4/ | --- | : --- | --- | 5,310 | 8.3 | . 04 | . 02 |
| Total | : | : |  | 63,660 | 100.0 | . 49 | . 20 |
| Total crops | : | : |  | 2,972,212 |  | $1 \overline{00.00}$ | 41.87 |
|  | : | : |  |  |  |  |  |

Table 6.- Index of volume of farm marketings and home consumption: Average annual farm marketings and home consumption, prices, and value aggregates in 1947-49, and percentage comparisons - Continued

| Commodity | Unit |  |  | Value | : Percentage of |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  | :Group total | $\begin{aligned} & \text { : All } \\ & \text { : live- } \\ & : \text { stock } \\ & : \text { and } \\ & \text { :products } \end{aligned}$ | $\begin{aligned} & \text { : AJl } \\ & : \text { commod- } \\ & : \text { ities } \\ & \hline \end{aligned}$ |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |
|  | : | : |  | 1,000 |  |  |  |
|  | : | : Thousands | Dollars | dollars | Percen | Percent | Percent |
| Livestock and products: |  |  |  |  |  |  |  |
| Meat animals: | : | : |  |  |  |  |  |
| Calves | : Cwt. | 30,840 | 22.51 | 694,209 | 7.2 | 3.9 | 2.24 |
| Cattle | : Cwt. | 219,746 | 20.15 | 4,427,875 | 46.2 | 24.6 | 14.29 |
| Hogs | : Cwt. | 186,820 | 21.85 | 4,082,024 | 42.5 | 22.7 | 13.17 |
| Lambs | : Cwt. | : 15,826 | 21.87 | 346,122 | 3.6 | 1.9 | 1.12 |
| Sheep | : Cwh. | : 5,028 | 9.11 | 45,805 | . 5 | . 2 | . 15 |
| Total | : | : |  | 9,596,035 | 100.0 | 53.3 | $\overline{30.97}$ |
|  | : | : |  |  |  |  |  |
| Dairy products: | : | : |  |  |  |  |  |
| Sales: |  |  |  |  |  |  |  |
| Butter | : Lb. | : 43,772 | . 63 | 27,489 | . 6 | .l | . 09 |
| Butterfat | : Lb. | : 762,927 | . 71 | 542,441 | 11.4 | 3.0 | 1.75 |
| Milk, retail | : Qt. | : 2,128,667 | . 18 | 389,546 | 8.2 | 2.2 | 1.26 |
| Milk, wholesale | : Cwt. | 709,530 | 4.36 | 3,093,550 | 65.0 | 17.2 | 9.98 |
| Home consumption | : Cwt. | 154,580 | 4.56 | 704,885 | 14.8 | 3.9 | 2.28 |
| Total | : |  |  | 4,757,911 |  | 26.4 | 15.36 |
| Poultry and eggs: |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Broilers | : Lb. | 1,211,094 | . 32 | 382,706 | 11.0 | 2.1 | 1.24 |
| Chickens, other | : Lb. | 2,547,708 | . 27 | 692,977 | 20.0 | 3.9 | 2.24 |
| Eggs (chicken) | - Doz. | 4,606,444 | . 46 | 2,114,358 | 61.1 | 11.7 | 6.82 |
| Turkeys | Lb. | 655,408 | . 39 | 254,954 | 7.4 | 1.4 | . 82 |
| Turkey hatching eggs Total | Each | 65,234 | . 26 | 16,830 | . 5 | . 1 | . 05 |
| Total |  |  |  | 3,461,825 | 100.0 | $\overline{19.2}$ | $\overline{11.17}$ |
| Miscellaneous livestock: |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| Beeswax | Lb. | 4,232 | . 41 | 1,756 |  | 2/ | . 01 |
| Honey | Lb. | 220,129 | . 19 | 41,604 | 21.4 | . 2 | . 14 |
| Mohair | Lb. | 15,719 | . 49 | 7,671 | 4.0 | . 1 | . 02 |
| Wool | Lb. | 232,031 | . 47 | 107,895 | 55.6 | . 6 | . 35 |
| Other 5/ | -- | - | . | 35,045 | 18.1 | $\begin{array}{r}.6 \\ .2 \\ \hline\end{array}$ | . 11 |
|  |  |  |  | 193,971 | 100.0 | 1.1 | . 63 |
| Total livestock and products |  |  |  |  |  |  |  |
|  | : |  |  | 8,009,742 |  | $\overline{100.0}$ | 58.13 |
|  | - |  |  |  |  |  |  |
|  | : |  |  |  |  |  |  |
| Total all commodities | : |  |  | 30,981,954 |  |  | 100.00 |
|  | : |  |  |  |  |  |  |
| $1 /$ Less than 0.005 percent. <br> 2/ Less than 0.05 percent. <br> 3/ Fresh basis. |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 4. Hemp fiber, hemp seed, and vegetables grown under glass. <br> 5/ Bees, horses, and mules. |  |  |  |  |  |  |  |

Table 7.- Relative importance of major zroups in the index of volume of farm marketings and home consumption in selected years 1/

| Commodity | 1910-14: 1725-29: 1735-39: 1942-45: 1947-49: 1952 2 |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | : Percent Percent |  | rcent | Percent Percent Percent |  |  |
|  | Relative importance in total value of food component |  |  |  |  |  |
| Crops | : |  |  |  |  |  |
| Food grains: |  |  |  |  |  |  |
| Wheat | : 3.5 | 7.8 | 6.4 | 7.3 | 9.7 | 8.4 |
| R1ce | . 3 | . 4 | . 4 | . 6 | . 3 | 1.0 |
| Other | $: \quad .3$ | . 2 | . 2 | . 2 | . 1 | . 1 |
| Total | 9.1 | 3.4 | 7.0 | 8.1 | 10.5 | 9.5 |
| Vegetables: | : |  |  |  |  |  |
| Truck crops: |  |  |  |  |  |  |
| Commercial for fresh use | 2.4 | 3.7 | 4.3 | 3.4 | 3.5 | 3.5 |
| Farm home-garden produce | 3.0 | 2.9 | 3.1 | 2.2 | 2.1 | 1.9 |
| Commercial for processing | . 5 | . 7 | . 8 | . 9 | . 9 | 1.0 |
| Potatoes and sweetpotatoes | 3.9 | 3.2 | 3.2 | 2.6 | 2.6 | 1.9 |
| Dry beans and peas | . 4 | . 5 | . 7 | . 8 | . 7 | . 5 |
| Total | 10.2 | 11.0 | 12.1 | 9.9 | 9.3 | 3.9 |
| Fruits and tree nuts: |  |  |  |  |  |  |
| Fruits: |  |  |  |  |  |  |
| Citrus | . 5 | . 9 | 1.5 | . 9 | 1.0 | 1.0 |
| Apples | 2.5 | 1.7 | 1.6 | 1.0 | 1.1 | . 9 |
| Other | 2.2 | 2.7 | 2.9 | 2.0 | 2.0 | 2.1 |
| Tree nuts | . 1 | . 2 | . 3 | . 3 | . 3 | . 3 |
| Total | 5.3 | 5.5 | 6.2 | 4.2 | 4.4 | 4.3 |
| Sugar crops: $\quad 0.50$ |  |  |  |  |  |  |
| Sugar beets | : 5 | . 5 | . 7 | . 4 | . 5 | . 4 |
| Sugarcane | . 4 | .? | . 3 | . 3 | . 2 | .? |
| Other | . 3 | . 2 | . 2 | -. 1 | $\underline{.1}$ | -. 1 |
| Total | 1.2 | . 9 | 1.2 | . 8 | . 3 | . 7 |
| Peanuts | . 2 | . 3 | . 5 | . 3 | . 9 | . 5 |
| Other | . 1 | . 1 | . 1 | . 1 | . 1 | . 1 |
| Total food crops | 26.1 | 26.2 | 27.1 | 23.9 | 26.6 | 24.0 |
|  | : |  |  |  |  |  |
| Livestock |  |  |  |  |  |  |
| Meat animals: : 20.400 .7 |  |  |  |  |  |  |
| Cattle and calves | : 19.0 | 15.9 | 16.4 | 19.9 | 21.1 | 20.7 |
| Sheop and lambs | : 2.4 | 1.9 | 2.3 | 2.3 | 1.6 | 1.4 |
| Hogs | $: \quad 17.2$ | $\frac{13.1}{35.9}$ |  | 19.5 |  | 13.4 |
| Total | : 3 3.6 | 35.9 | 33.4 | 41.7 | 39.5 | 40.5 |
| Poultry and eggs: $\quad$ a 20.05 |  |  |  |  |  |  |
| Chiciens | 5.0 | 5.2 | 4.7 | 3.6 | 2.8 | 2.5 |
| Broilers | : 0 | 0 | . 5 | 1.1 | 1.6 | 3.3 |
| Turkeys | : 0.5 | . 5 | .9 | 1.0 | 1.0 | 1.6 |
| Eggs | : 3.4 | $\frac{9.2}{14.9}$ | $\frac{3.7}{14.8}$ | $\frac{8.6}{14.3}$ | 8.7 | $\frac{9.1}{16.6}$ |
| Total | : $\overline{13.9}$ | 14.9 | 14.8 | 14.3 | 14.1 | 16.6 |
|  |  |  |  |  |  |  |
| M1lk (wholesale and retail) | 3.7 | 11.9 | 14.2 4.8 | 13.4 3.1 | 14.4 | 14.4 |
| Farm separated cream 3/ | 2.9 | 4.9 | 4.8 | 3.1 | 2.2) | 1.8 |
| Farm butter | : 1.7 | . 6 | . 3 | . 2 | -1) |  |
| Home consumption | 7.9 | $\frac{5.4}{28.8}$ | $\frac{5.2}{24.5}$ | $\frac{3.3}{20.0}$ | $\frac{2.9}{19.6}$ | $\frac{2.5}{19.7}$ |
| Total | : 21.2 | 22.8 | 24.5 | 20.0 | 19.6 | 19.7 |
| Honey | : $\quad .2$ | . 2 | . 2 | . 1 | . 2 | 76 |
| Total food livestock | : 73.9 | 73.8 | 72.9 | 76.1 | 73.4 | 76.0 |
| All food | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
|  | : | Relati | mporta | in tota | lue of |  |
|  | marketings and home consumption |  |  |  |  |  |
| Food | : 77.3 | 79.2 | 81.0 | 81.5 | 78.4 | 79.1 |
| Nonfood | : 22.7 | 20.8 | 19.0 | 18.5 | 21.6 | 20.2 |

1/See text for limitations of data. Prior to 1940, values in terms of 1935-39 prices; thereafter, valued at 1947-49 prices. For list of all items included in each commodity group see table 6. 2/ Preliminary. 3/Usually reported as "butterfat" or, recently, "milkfat".

Dat. on exports contained in this handbook cover only domestic merchandise. They do not include re-exports of foreign merchandise which are thus omitted from measures of both the incoming and the outgoing flow of goods.

For the World War II years, additional data on foreign trade were available to supplement the regular reports of the Department of Commerce. These included information on Government shipments to our Territories under the stock-piling programs, Government procurement in the Territories for immediate export or for military use, shipments by Government agencies for use of our allies in military or other Govern-ment-leased or Government-owned vessels or in commercial vessels. For most commodities it was possible to reconcile data on lend-lease shipments for the war period as a whole. In those instances in which differences in classification of timing or errors in reporting prevented such reconciliation, detailed study was made of the purchase and financial data of the Department of Agriculture to learn whether the Department's reports on shipments or the Department of Commerce data on lendlease and other Government exports were more accurate, allowing for some lags in reporting. As the Department of Agriculture data on deliveries for export and deliveries to military and domestic agencies could be coordinated more satisfactorily with its data on stocks, they were used for most commodities to indicate takings from market supplies on a year-to-year basis. In many instances the differences between the two sets of export data proved to be insignificant even on an annual basis.

Exports and shipments of food through commercial channels were estimated for the war years after a careful analysis was made of total exports and of Government exports such as those under lend-lease, United Nations Relief and Rehabilitation Administration, and relief programs - often country by country. Beginning in April 1948, no official data are available on inshipments from and shipments to Alaska and'Hawaii, because shippers were not required to file documents on the subject in accordance with the provisions of Public Law 476, 80th Congress, approved April 7, 1948. For those foods for which receipts from or shipments to these Territories are large, estimates were made for years beginning with 1948. This is discussed in the individual commodity statements that follow.

Food procured by the military services for civilian feeding in occupied areas was measured in the year procured rather than in the year shipped. It was included with military procurement as described below. Therefore, total exports and shipments cannot be derived from the tables for 1944 to date for those commodities that were used for military civilian-feeding programs. Because of the abnormal character of such exports, this method of handing the data is not likely to interfere with analysis of export trends.

## Stocks

Stocks of food commodities include supplies held in raw, semiprocessed, and processed.forms by farmers, manufacturers, and various types
of distributors. Although available information on total stocks held on January l, for example, may often be incomplete, changes in known stocks from year to year are useful if on a comparable basis.

Information on stocks of food were obtained from reports of stocks in commercial cold-storage warehouses (issuance begun in 1914); from reports of the Crop Reporting Board such as grain stocks on farms and at interior points and stocks of several vegetables; market-news data on stocks in terminal markets; and some trade data. During World War II such data were supplemented by special surveys when the Government took control over the distribution of coffee, tea, cocoa, and some of the spices. Monthly reports on packers' and wholesale distributors' stocks of canned fruits and juices, vegetables, dried fruits, etc., were required for administration of the rationing program.

Only scattered information on retail stocks of food and supplies in transit has ever been gathered. Wholesalers' and processors' stocks of perishable items are partially covered in the cold-storage reports, but supplies held outside commercial cold-storage warehouses are not reported.

During the war and postwar years, the distinction between strictly commercial and Government holdings has been important. Data on War Food Administration stocks were generally statistical residuals until 1944 when the first complete physical inventory was made. A second complete inventory was taken in 1945-46. Since that time, the data on stocks have been derived from data on purchases and shipments but periodic physical checks on holdings have been made for critical cormodities to adjust for errors in reporting and storage losses. Although information on military stocks in this country is available for recent years, such stocks were excluded from changes in supplies because military procurement is defined as the quantities taken from commercial marketing channels in a given year.

## Military and Other Government Takings

Information on military and other Government purchases from domestic supplies for civilian use outside continental United States is necessary if we are to derive estimates of civilian consumption from data on production, stocks, and foreign trade. Although a thorough investigation of source material has been made, it seems impossible to obtain usable data on military takings during the period of World War I. The only available information is the records of shipments to the American Expeditionary Forces, which apparently included supplies for Belgian relief, American Red C'ross, and the allies. No data have been found for food purchases for troops in this country. Accordingly, estimates of domestic consumption for 1917-19 include the Armed Forces in the population and supplies for the A. E. F. in the total food supply. Information on military takings before 1942 are fragmentary, partly because procurement was largely decentralized, but they have been estimated for 1941 when they first became significant.

Estimates of military takings after 1941 were based on reports of actual deliveries to military agencies plus certain allowances for unreported local purchases. Supplies procured and used by the Armed Forces for feeding civilians in occupied areas are included with those for the Armed Forces. The only information on the quantities so used, in 1943 and 1944, is shipments from warehouses in this country to theaters of operations, and there is no supplementary information on quantities diverted to troop use nor on quantities diverted to civilian feeding from supplies for troops. By 1945, the feeding programs were so organized that reports on shipments from this country are a fair indication of the quantities used. Information is not available, however, concerning supplies of food procured under the regular supply programs, and held by the Armed Forces abroad at the end of the war, which were sold or used for civilian feeding. Because procurement for civilian-feeding programs is a better measure of withdrawals from market supplies than are shipments, and because they avoid problems of duplication, such data were used in the supply-and-distribution tables in the appendix.

Purchases by the Government under various domestic and foreignrelief programs were allocated by means of stock adjustments as far as possible to the years when such supplies were distributed for domestic consumption or withdrawn from domestic supplies. Until 1941, quantities exported were automatically included in the exports reported by the Department of Commerce.

## Nonfood Utilization

The Crop Reporting Board provides information on principal nonfood utilization of food commodities at the farm level. Some data on such use at processing stages are available from the Census of Manufactures. These quantities were subtracted from the supplies when civilian food consumption was estimated. But data on nonfood use (other than for feed, seed, and alcohol, and alcoholic beverages) of such items as dry milk, cornmeal, wheat, and rice are inadequate or not available. Specific note is made of such problems in the following commodity statements.

## SOURCES AND METHODOLOGY OF DATA FOR MAJOR FOODS

## Meats 32/

Estimates of the quantity of meat consumed annually by the civilian population of the United States, given for 1909-52 in table 54, were calculated as the difference between the supply available from all sources and the disappearance into all noncivilian uses. 33/Essentially, the

32 Prepared by Harold F. Breimyer, Bureau of Agricultural Economics.
33/ Data in the table are in terms of "carcass weight." Carcass weight of beef, veal, and lamb and mutton can be defined as approximately equivalent to the dressed carcass, excluding offal. But as pork is immediately cut into products, the carcass weight of pork is a total of the individual products, excluding offal, and omitting the weight of material rendered into lard as well as the weight of head bones. Head bones are not excluded from dressed weights reported for beef, veal, and lamb and mutton.
supply of meat in each year is made up of production from total United States slaughter, of imports from foreign countries, and of cold-storage stocks carried over from the preceding year. Distribution includes exports to foreign countries and shipments to Territories and possessions of the United States, military takings, cold-storage stocks held at the end of the year, and civilian consumption.

Meat is produced in commercial plants and by slaughter on farms. Commercial production of meat is reported from federally inspected slaughter and from other wholesale and retail slaughter. Data on federally inspected slaughter are obtained incidentally to the administration of the Meat Inspection Act of 1906, applying to meat for interstate sale. The Bureau of Animal Industry has reported numbers of animals slaughtered under Federal inspection 1907 to date. Meat produced from this slaughter was calculated using average dressed weights per head reported by inspected slaughterers from 1921 to date and estimated from available data for 1909-20

Data on meat produced by wholesale slaughterers not under Federal inspection and by retail slaughterers were estimated by the BAE up to 1943, using the Census of Manufactures 34/. The census showed the number and total live weight of animals slaughtered in the entire wholesale slaughtering and meat-packing industry. To estimate nonfederally inspected meat production, changes in sample data on number and live weight of animals slaughtered without Federal inspection were compared with corresponding data relating to those slaughtered under Federal inspection. Basic data for estimating retail slaughter up to 1943 were even more incomplete. Estimates of quantities slaughtered by retailers generally have been made in connection with balance sheets of livestock numbers, production, marketings, income, and local farm slaughter. The estimates of retail slaughter were based on miscellaneous records of local slaughter obtained through State agencies, disposition of animals as indicated by records of marketings, deaths, and farm slaughter. The census data on retail slaughter in 1929 provided a benchmark for these estimates. Average weight per head of local slaughter was estimated on the basis of average weights at the principal markets and of averages for animals slaughtered under Federal inspection.

Beginning July 1943, data on number and live weight of livestock slaughtered by nonfederally inspected wholesalers and retailers were obtained monthly. Mandatory reports were submitted to the War Food Administration from July 1943 through March 1945, and subsequently to the Office of Price Administration. From them, the BAE prepared monthly estimates of nonfederally inspected slaughter. At the end of 1945 , when the slaughtercontrol program was temporarily terminated, the BAE provided for voluntary reporting. The slaughter-control program was reinstituted in April 1946. Since October 1946, the BAE has collected voluntary monthly reports from nonfederally inspected wholesale and retail slaughterers.

34/ U.S. Bureau of the Census. Census of Manufactures. 1914-1947. Washington, D. C.

The slaughter-control program, administered through licenses, provided the most complete list of slaughtering establishments ever obtained. Coverage of reports during the time when these were mandatory and filed with the War Food Administration was exceptionally large. About 90 percent of wholesale slaughterers, about 85 percent of local slaughterers, and about 70 percent of the butchers who were required to report were included in the tabulations.

Primary data on the number of head of meat animals slaughtered on farms have been obtained for about 25 years as a part of annual field surveys by the Bureau of Agricultural Economics relating to the disposition of livestock. The censuses of agriculture provided periodic benchmarks for the estimates of numbers slaughtered. No information was obtained on live weight prior to 1943. The average live weight for the years prior to 1943 was based on general knowledge regarding the type of livestock raised and slaughtered in the different States along with information on average weights of animals slaughtered under Federal inspection and as reported in the Census of Manufactures. Since 1943, basic data on live weight of farm slaughter have been obtained annually through the regular crop and livestock surveys made by the Bureau of Agricultural Economics. Estimated totals of meat slaughtered on farms were published in connection with the balance-sheet estimates of livestock disposition. As indicated, they were less reliable than those for federally inspected slaughter.

Several minor qualifications regarding production data are to be noted. For example, production data for 1933 to 1936 include the quantities of meat slaughtered on Government account from livestock bought by the Federal Government, mainly for drought relief. Beginning in 1940, data on Federal inspection exclude slaughter and meat production in Hawaii and the Virgin Islands.

Because commercial cold-storage stocks of meat have been reported only since 1916, supply data for 1909-15 use no adjustment for changes in"stocks during each year. The absence of such figures does not materially affect the estimates for consumption. As a rule, the estimates of civilian consumption are poorest for earliest years; then they progressively improve in accuracy, decade by decade. Currently, the data on stocks are published in the Cold-Storage Report of the Transportation and Warehousing Branch, Production and Marketing Administration. 35/ Total stocks are a summation of stocks of beef, pork, lamb and mutton, and veal. Sausage, sausage-room products, canned meats, and canned-meat products, data for which are available only since October 1, 1944, are excluded. Edible offal also is omitted. Stocks of meat held by the Government during its programs of 1933-36 and of World War II were deducted from the data on commercial stocks and are carried as Department of Agriculture stocks in table 54. Stocks are reported in product

35/ United States Production and Marketing Administration. Transportation and Warehousing Branch. Cold Storage Report. Monthly. (Processed.)
weight rather than carcass-weight equivalent, but the difference in these two reporting categories is small.

Commercial imports and exports of meat, including shipments to our Territories, are published in official reports of the United States Department of Commerce. Since 1948, data have not been available on the shipments of meat to Hawaii and Alaska, but their magnitude is relatively quite small. Data in the supply-and-distribution table are the published series, converted to a carcass-weight-equivalent basis, with exports of UNRRA and lend-lease and other Government programs shown elsewhere.

The meat operations of the U. S. Department of Agriculture in the middle thirties and in World War II are shown in a separate section of table 54. Meat produced under Government programs of the earlier period went into domestic consumption. Some of each year's production was held in storage until the following year. The net change in USDA stocks, as calculated from beginning and ending storage figures, carries forward the supplies from USDA slaughter. In this way, the quantity of each year's consumption includes only that part of emergency slaughter meat actually released to civilian consumers during the year.

Operations of the Department of Agriculture in the meat field were quite extensive during and just after World War II. At that time, the Department supplied meat for lend-lease, UNRRA, and several other agencies. Data on these operations also are brought together in summary form in the Department of Agriculture section of the table. Receipts of meat by the USDA were taken from meat-grading certificates of the Commodity Credit Corporation and from net-transfer data on the relatively small quantities of meat received by the CCC from military agencies. Information on USDA exports and shipments was taken from USDA records. These records were more detailed than Department of Conmerce data. USDA stock data for war years were calculated from net purchases and total deliveries. This calculation was made necessary by the fact that the accounting-record data on USDA stocks before 1944 were not comparable with purchase and delivery data. Beginning in 1944 the calculated USDA stocks are quite similar to those reported from warehouse receipts.

Information on meat procurement by the military agencies during and since World War II is based principally on the records of the Chicago Quartermaster Center and Chicago Quartermaster Depot. These organizations bought most of the fresh, frozen, and canned meat for the Army, Navy, Marine Corps, Coast Guard, and War Relocation Authority, and for civilian relief feeding in occupied areas abroad. Data were converted to carcass-weight equivalent. They do not cover military acquisition of meat from foreign sources. Such meat did not enter the United States and so has no bearing on the domestic meat supply. No figures are available for military use in World War I or any other years before 1941.

Production and Distribution of Edible Offal.- A secondary but by no means negligible product from slaughter of livestock is edible offal. Offals are commonly omitted in data for United States production and consumption of meat, both of which are expressed in terms of the
carcass-weight equivalent of all carcass products. Data on carcass weights of meat production and consumption exclude edible offals.

The most important offal products, in terms of weight per animal, are head meat (including tongue), heart, liver, and tripe. Other items the production of which is included in table 55 include plucks, sweetbreads, weasands, and tails. Kidneys are included for hogs, sheep, and lambs, but are excluded for cattle, because the kidneys are part of the dressed-beef carcass for which meat-production data are reported. Data in the table exclude weight of caul and other fats, tallow, oleo oils, and casings.

Data on production of offals are not currently collected. It was necessary to estimate production by means of average percentage yields per 100 pounds dressed weight of carcass. The percentage factors were based on data for the production of each offal item relative to weight of animals for a number of plants during 194l. As thus derived, edible offals are estimated as equivalent to 6.7 percent of the dressed weight of beef, 10.7 percent of veal, 5.1 percent of lamb and mutton, and 6.7 percent of pork, excluding lard.

For the recent years, the supply of offals was computed by adding imports and beginning stocks to the estimates of production. The supply was distributed among exports and shipments, military takings, ending stocks, and civilian consumption. The data on foreign trade were obtained by combining several classes of meats that are mostly offals. As kidneys and livers make up the bulk of foreign trade in offals, any error due to classification is slight. Comparable data on imports and exports are not available for the years before 1934. For this reason, consumption figures for the earlier years are somewhat less accurate than those from 1934 to date.

Quantities of offals used by the military forces, including those for relief feeding abroad, were obtained from the Quartermaster General on deliveries and acceptances by the Army, Navy, and Marine Corps.

Cold-storage stocks of edible offals are reported regularly. Before July 1, 1944, trimmings were included in the stocks of offals but since that date they have been included with the individual meats. Data on stocks for the earlier and later periods are therefore not entirely comparable. For 1944, an approximate adjustment for the changeover was included in the consumption estimates.
Fish 36/

Production statistics on fish and shellfish are collected by the Fish and Wildlife Service of the United States Department of the Interior. Information on the annual commercial catch is first
assembled from State records by marketing specialists. Wherever complete data are not available from these central sources, visits are made to fishermen, wholesale dealers, and manufacturers of fishery products to obtain information from them on their production or purchases of fishery products. Although it is impossible for the few marketing specialists to interview each fisherman in a given locality, the leading ones and a representative number of those of lesser importance are interviewed to obtain reliable information on their production.

To the extent that funds have permitted, the representatives of the Fish and Wildife Service have made annual canvasses of all commercial fishery operations of the oceans and bays, and of the coastal areas as far inland as commercial fisheries are of significance; of the fisheries on the Mississippi River and all of its tributaries where commercial fishing activities are conducted; and the Great Lakes, the adjacent bays, the international lakes of northern Minnesota, and the rivers that have outlets in these waters. The only years for which a complete survey of the entire country. was made were 1908, 1931, and 1950. For all other years since 1880 some parts of the country were not canvassed. Although no survey data were available for the Mississippi River States from 1931 until 1950, the annual commercial-fishery production statistics for the United States from 1929 to date have been more complete than in the preceding years. For the years in which no catch or production data were reported, estimates of consumption were made on the basis of the consumption pattern or trend. Actual or partly estimated data are available on the total catch in the United States for all years following 1929.

Data relating to the previous year's production of canned fishery products and byproducts are obtained at the beginning of the current year from each plant in the United States that processes these products. The reports are obtained by mail, and personal visits by the marketing specialists are made to those firms that find it impossible to furnish the necessary information by mail. Annual production data have been complete in coverage since 1921.

Statistics on commercial production of frozen fish and coldstorage holdings of fresh and frozen fish are collected each month directly from warehousemen and fish processors by the Fish and Wildlife Service and the Department of Agriculture.

Incomplete data on stocks of canned and cured fish affect the accuracy of the estimates of civilian consumption in this country by making them too high in some periods and too low in others. For canned fish, only the stocks of salmon are available and only for 1926 to 1942. The annual reports of the Pacific Fisherman 37/ are the source for these data. Even the data for canned salmon are inadequate because they represent quantities held by packers only. There are indications that for some prewar years the carryover stocks in the
hands of wholesale distributors were unusually large. But for World War II years 1942-45, distributors' stocks as of December 31 were undoubtedly insignificant. For canned tuna and Pacific mackerel, data on packers' year-end stocks are available for 1941-46 but they were not used in making estimates of consumption of canned fish because the holdings were small, both relatively and absolutely. Beginning with 1948, when inventories of canned fishery products began to increase, estimates of annual changes in packers' stocks have been made on the basis of trade reports.

Stocks of cured fish, as indicated in the table, refer to reported commercial cold-storage holdings of smoked fish only. The reported cold-storage stocks for cured fish include products other than the smoked items; these "other" products include commodities that are subject to reprocessing. To avoid duplication with reported commercial production of canned and cured fish, the intermediate (that is, partially processed) products were excluded from stocks.

Data on foreign trade, including shipments between continental United States and the noncontiguous Territories of fresh and processed fish and fishery products, were obtained from the annual reports, Foreign Commerce and Navigation of the United States, and from official records of the Bureau of the Census. Beginning with April 1948 official reports on shipments between continental United States and both Alaska and Hawaii were discontinued. Since that time, annual receipts of canned and cured fishery products from Alaska were estimated, based on production of these commodities in that area. Comparable estimates are not available for the relatively small volume of receipts from Hawaii because production in that Territory is not reported. Imports of fresh and frozen and cured fishery products were adjusted to eliminate possible duplication with reported domestic commercial production of canned and cured fishery products. The adjustment was on the basis of the major use made of the individual species after arrival in the United States. For example, most of the fresh and frozen tuna imported into this country is subsequently canned and is therefore later reported among the statistics on domestic production of canned fish. In the handling of the exports of fishery products, it was necessary to exclude one minor commodity group (fish, not elsewhere specified) because of the impossibility of separating the data into fresh or frozen, canned and cured products.

Data on purchases of fish and fishery products by military agencies are available for each year beginning with 1943. Information for 1942 was estimated, using fragmentary data as a base. No purchase data are available for the years prior to 1942, but they probably were relatively small.

The data on supplies and distribution of fishery products were converted to an "edible-weight" basis, using factors developed over a period of years by specialists of the Fish and Wildlife Service and the United States Tariff Commission (table 56). In general, for the purpose of converting the production estimates to an edible-weight basis:
(1) Canned, cured, and fresh and frozen packaged fin fish were assumed to be 100 percent edible;
(2) Fresh and frozen unpackaged fin fish were assumed to contain no more than 50 percent edible portion;
(3) Among the shellfish, the catch of mollusks (clams, oysters, etc.) was assumed to be 100 percent edible because the data are reported on a meat-equivalent basis and the crustaceans (such as crabs and lobsters) were converted, based on the average yield of meat for each species.

For many individual species of fresh or processed fish, separate conversion factors were used, depending on (l) the basis on which production estimates were reported and (2) the yield factors obtained from laboratory tests and from fish processors' experience.

In using general statistics relating to fish and fishery products it is important to note the basis on which the data are presented. Listed below are the terms most commonly used in connection with fishery statistics:

Fish includes (l) fin fish
(2) mollusks - clams, oysters, scallops, etc.
(3) crustaceans - crabs, lobsters, shrimp, etc.

Round weight, except for mollusks, is the weight of the fish as taken from the water. Catch statistics for mollusks are on a "meat" basis.

Drawn weight is the weight of the fin fish after the entrails have been removed.

Dressed weight is the weight of the fin fish after the entrails, head, tail, and fins have been removed.

Edible weight is the weight of the edible portion of the fin fish, mollusk, or crustacean.

Fillets are the meaty sides of the fin fish which have been cut lengthwise away from the backbone.

Steaks are cross-section cuts of larger species of fish, usually 5/8-inch thick or more.

Marketed weight is the weight of the fish in the form in which it was marketed - round, drawn, dressed, etc.

A comprehensive and detailed statistical analysis of the supply and distribution of fish for human consumption in this country covering
the period 1930-47 38/ was prepared in 1948 by the Bureau of Agricultural Economics in cooperation with specialists of both the Fish and Wildlife Service of the Department of the Interior and the United States Tariff Commission. The statistical series are maintained currently. Information for years prior to 1930 is less satisfactory (except for canned fish) and is described here.

For fresh and frozen fish the annual production data for 1929 to date represent estimates of the quantity of the corresponding total catch thus utilized. The estimates of utilization were developed by specialists of the Fish and Wildlife Service on the basis of the catch reported in areas in which a survey was made for the period plus an estimate of the catch in the unsurveyed regions. The estimates of annual utilization were adjusted to exclude production in Alaska, and were then converted to an edible-weight basis by eliminating the items for which the conversion factor was known - for example, fresh and frozen packaged fish and shellfish - and converting the remainder on the basis of a 50-percent yield of meat. The annual production data on packaged fish were reasonably complete, but for packaged shellfish the output had to be estimated for the years between 1940 and 1950 because no surveys were made for this item.

Foreign-trade data, including shipments between the United States and the noncontiguous Territories, on fresh and frozen fish have been available, although not on a strictly comparable basis, since 1909. For example, for current years it was necessary to omit imports of frozen tuna and fresh herring into this country because most of these commodities are reprocessed before they are distributed here. This adjustment resulted in an understatement of imports but it forestalled what would have been a serious duplication with the reported United States production of canned tuna and Maine sardines (Atlantic sea herring).

Monthly reports on cold-storage holdings of fresh and frozen fish have been available since 1917. Before 1943 stocks were reported on a midmonth basis. The January 1 carryover for $1930-42$ was assumed to be the midpoint of the stocks on January 15 and the holdings on the preceding December 15.

The year-end stocks of frozen fish were adjusted to eliminate holdings in Alaska and the quantities to be used for bait or animal food in order to obtain the figures for stocks held in continental United States for human consumption. Separate data on cold-storage holdings in Alaska were not available prior to 1942 so the information for 1930-41 was reduced by 2 percent - the average relationship between reported total United States plus Alaska holdings and the stocks in Alaska on January 1, 1942-47. Likewise, on the assumption

38/ Sherr, Harry, and others. Supply and Distribution of Fishery Products in the Continental United States, 1930-47. U. S. Bur. Agr. Econ., The National Food Situation, July-Sept. 1948, pp. 19-40.
that frozen fish for animal food became increasingly popular after 1930, a progressive allowance from less than 1 to almost 2 percent was made for 1930-41.

Military takings of fresh and frozen fish in 1943-52 were reported as a total. Thus the data had to be converted to an edible basis by using an average conversion factor of about 50 percent. This factor may be somewhat high as the total includes purchases of fish fillets and steaks.

The cold-storage holdings in continental United States of frozen fish for human consumption were converted to an edible basis using information obtained from a study made in 1945. This study indicated the form (round, dressed, fillets, etc.) in which the various species of fish were stored.

For 1909-28, per capita estimates of fresh and frozen fish consumed by civilians in this country were made on the basis of a straightline interpolation between 1909 and 1929. With data on both production and foreign trade available for 1908, it was possible to make an estimate of civilian disappearance of fresh, canned, and cured fish. That year was the only one between 1880 and 1929 for which a complete survey of the country was made.

Reported production of canned fish 39/ in continental United States has been complete in coverage since 1921. The output data were expressed in terms of product weight, which coincides with the edible-weight basis, and had only to be converted from the basis of "standard cases" to "equivalent pounds."

Foreign-trade data and, until 1948, shipments between the United States and its noncontiguous Territories have always been complete in coverage, but in some instances minor adjustments were necessary. For example, imports of canned sardines are reported on the basis of the weight of the product including the weight of the immediate container. An allowance had to be made for the weight' of the can.

Calendar year-end data on stocks of canned fish are available only for salmon and only for those quantities held at the packers' level during 1926-42. Data regarding packer stocks of canned tuna and Pacific mackerel were available for 1941 to 1946 , but they were not used because comparable data on salmon, a major canned-fish item, were missing for those years. For the war years, the lack of adequate data on stocks was not a problem because most of the canned fish had moved into the distribution channels by the end of the year.

39/ Excludes canned food products containing small quantities of fish or shellfish; for example, canned clam chowder, clam broth, and codfish-cake material.

After the end of World War II the general movement of these products into distribution channels began to approximate the prewar marketing pattern, and packers' stocks gradually began to increase from year to year. As a result, beginning with 1948, estimates were made of the year-to-year change in the size of packers' stocks of canned fishery products. These estimates were based on fragmentary information from trade sources.

Because of inadequate data on stocks it was possible to estimate only the total and the per capita movement of canned fish into civilian distribution channels, not actual consumption.

Estimates of the per capita civilian consumption of canned fish in the United States, 1909-20, were made on the basis of a straight-line interpolation.

Estimates of the consumption of cured fish by civilians in this country from 1929 through 1952 were derived from information on production which was relatively complete only for 1929-31, 1937-40, and 1950. Surveys made by the Fish and Wildlife Service indicated the quantity of cured fish manufactured in this country during those years. For the intercensal yeais and after 1950 rough approximations of annual production were derived on the basis of estimates of the amount of fish from the annual domestic catch which was processed into cured products, plus imports of partially and completely processed cured fish for subsequent reprocessing in this country.

Information on cold-storage holdings of cured fish have been inadequate throughout for it was not possible to separate the quantities subject to reprocessing before sale from the cured fish which were finished products. Beginning in 1941, the commodity classification used in the reporting of monthly cold-storage holdings of cured fish was expanded. It became possible at that time to identify stocks of some of the cured-fish items that were available for direct movement intio distribution channels.

Information on imports and exports of cured fish, and on trade between the United States and the noncontiguous Territories, is complete in coverage. However, beginning with 1948 data on trade with the Territories is partly estimated. But not all the reported data on foreign trade could be used because of statistical obstacles. For instance, some of the imported fish were generally reprocessed and later reported among domestic-production estimates.

For 1909-28, civilian per capita consumption of cured fish was estimated on the basis of a straight-line projection.
Poultry and Eggs 40/

Estimates of poultry production cover farm chickens and eggs, turkeys, and commercial broilers. No annual estimates are available $40 /$ Prepared by Gerson Levin, George A. Rogers, formerly of the Bureau
of Agricultural Economics, and Edward Karpoff, Bureau of Agricultural
Economics.
for other species of poultry in intercensal years. Rough approximations of consumption of ducks and geese are described in chapter 3. Nonfarm production of turkeys is regarded as of little significance and was not estimated. To estimate total production of chickens and eggs in this country, 10 percent of the current farm estimate was used for nonfarm output of both chickens (excluding broilers) and eggs, based upon unpublished census data for sample town holdings in 1930 and a special survey made in 1948.

Eggs.- Estimated total production of chicken eggs in a given year is the sum of production of farm eggs plus a lo-percent allowance for nonfarm output. Estimates of the number of layers on farms and the rate of lay per bird were used to estimate egg production. Numbers of layers on farms January $l$ of census years were obtained by adjusting the census base (for example, April l) to a January l equivalent. Numbers on farms January 1 for intercensal years were estimated primarily by use of year-to-year changes shown by December rural mail-carrier surveys covering about 160,000 flocks. Month-to-month changes in numbers in laying flocks, average rate of lay per bird, and the resultant farm production of eggs were based upon monthly samples covering about 30,000 farm flocks. Checks on rate of lay are not currently available. In 1930, however, the results of the April census enumerations of "eggs produced yesterday" agreed closely with monthly returns from crop reporters.

Supplies of eggs for civilian consumption in terms of shell-egg equivalents were determined for most of the period by adjusting total egg production for changes in cold-storage stocks (both commercial and Departnent of Agriculture), adding imports, and subtracting exports, shipments to Territories, eggs used for hatching, and storage losses of the Department of Agriculture, USDA deliveries for export, and military takings. (Table 59.)

Cold-storage data on shell eggs became available in 1915 and on frozen eggs in 1916. Data on stocks of dried eggs were first collected in 1943. Data on the Department's stocks have included shell eggs since 1940 and Government holdings of frozen eggs since 1941.

Total eggs used for hatching were computed for years through 1940 by adding the number of farm chickens raised, plus 10 percent for nonfarm production, to the number of commercial brcilers produced, and multiplying this sum by a conversion factor representing eggs required per chicken raised. Commercial hatchery production has gradually supplanted farm hatchings as a source of chicks. On the basis of special surveys of such output in 1937, 1938, and 1943, a regular report on hatchings was instituted by the Bureau of Agricultural Economics in 1943, and estimates for earlier years have been made. For years beginning 1941, hatchery output was used as the primary basis of estimates of eggs used for hatching. An allowance for loss was made for each year (for example, number of chicks produced in 1952 is divided by 0.7 to obtain number of eggs set) and eggs reported as used for hatching on farms were added.

Data on exports and imports have been available since 1910. Before 1922, export data included only shell eggs. From 1922 to 1940 (1938 and 1939 not available), eggs and yolks, other than in shell, were reported only
in total. This conversion problem was met by treating these egz products as all equivalent to whole frozen eggs. Data on egg products in other instances were converted to shell-egg basis using standard factors for individual products. Shipments to Territories, Department of Agriculture deliveries, and military procurement have been separately reported since 1941. However, no data on shipments to Hawaii and Alaska have been available since 1948.

No allowance was nade in the data on supply and distribution given in table 59 for breakage and loss nor for the relatively small quantity of eggs used for nonfond purposes such as culture media and tanning. The data were developed in terms of millions of dozens. Some of them, such as stocks, had to be converted from pounds of frozen eggs. The estimates of per capita consumption of eggs are frequently needed in terms of pounds. Accordingly, conversion factors were developed from trade information, and were changed from time to time. For example, for 1951 and 1952, 38.5 pounds of liquid or frozen eggs were deemed to be equivalent to a 30 -dozen case of eggs, rather than the factor 37.5 pounds used for 1937-50. The increasing average size of eggs necessitated a change from the standard factor of 1.5 pounds per dozen eggs. Beginning with 1947 data, the factor has been changed 0.01 pound a year to reach 1.56 pounds per dozen eggs in 1952.

Chickens.- Estimated total output of chicken meat in each year is the sum of chicken consumed on farms where produced, sales of farm chickens 4l/, production of commercial broilers, plus 10 percent of farm consumption and sales to allow for nonfarm production of chickens (in backyards of villages and towns). (Table 57.)

Estimates of numbers of farm chickens raised were based primarily on the census enumerations every 5 years, with certain allowances for incompleteness based on State farm census and inspection records and other check data. Numbers raised in intercensal years were estimated on the basis of year-to-year changes in the June rural mail-carrier survey, certain monthly General Crop Schedules, and other annual check data described below. Returns from these surveys cover holdings on about 150,000 farms. Check data of an enumerative character for intercensal years consist of assessors' annual farm censuses in 13 States, an annual school survey in one State, the report of hatchery output, and marketings data.

Estimates of production of farm chickens were obtained by subtracting the death loss during the year of chickens on hand at the beginning of the year from the number of farm chickens raised during the year. The number raised was assumed to be the number of baby chicks started minus death losses. Slaughter from farm production was taken as the figure for production plus or minus inventory changes in numbers of chickens on hand at the beginning and end of each year.

41/ Farm chickens are produced incidentally to egg-producing enterprises as opposed to commercial broilers which are produced solely for their meat.

It included both farm consumption and sales off farms. The December rural carrier survey was the principal source of inventory information. The rural carrier surveys provided the main basis for determining yearly United States output for 1934-47. Chick-placement data for the seven major broiler areas since 1947 have provided a better basis for making annual estimates of broiler production. During the earlier years check data were not available for these estimates in all States.

Monthly and annual estimates of chick production in hatcheries were based on sample data obtained from about 25 percent of the total capacity of the 10,000 hatcheries in the country. Monthly surveys were followed at the end of the year by a check-up survey to obtain information from hatcheries not reporting in monthly surveys. About every 5 years a comprehensive survey covering all hatcheries in the country has been made to obtain basic information for any necessary revisions. Hatchery production in 1952 accounted for about 93 percent of farm chickens raised plus all of the commercial broilers. It is a rough check on chickens raised on farms, after allowances are made for nonfarm production, commercial broiler production, chickens hatched on farms where produced, and death loss of farm chickens raised.

Correspondents supply information on average weights of young and mature chickens consumed on farms or sold and on approximate percentages of each. Weights are also reported for broilers. In the last few years, commercial broilers have averaged about 3 pounds each and farm chickens up to 4.5 pounds at time of sale, on a live-weight basis. The data were converted to dressed-weight equivalents (New York style, excluding blood and feathers), using 12 percent loss through l950, ll percent since then. In recent years, more chicken is sold ready-to-cook or eviscerated. So data on supply and distribution are given on eviscerated basis also for 1947-52 and eviscerated equivalents of all per capita data were computed. This basis will be used henceforth. Percentages applied to liveweights to obtain eviscerated basis are: 1909-46-all chickens, 66 percent; 1947-52 - commercial broilers 70 percent,farm chickens 68.

Annual supplies of chicken meat for domestic civilian consumption were ascertained by adjusting total production for changes in coldstorage holdings (including Government held), by adding imports, and by subtracting commercial exports and shipments to Territories, USDA deliveries, and military takings for years since 1941. Data on cold-storage stocks have been available since 1916; import data began in 1910, exports in 1922. Data on cold-storage stocks and some on foreign trade do not differentiate between New York dressed and eviscerated. So the same product weights were used for computing both dressed and eviscerated weights for 1947-52.

In the computation of the supply and distribution of chicken meat, no attempt was made to differentiate between broilers and other chickens, except that the slaughter figure is based on the addition of separate figures for the two classes. However, their proportions in
the slaughter estimate indicate the proportions in the total civilian supply. For 1952, they were: broilers 51 percent, farm chickens 45 percent, and nonfarm chickens 4 percent.

Turkeys.- Basic data on numbers of turkeys raised were obtained from the quinquennial census enumerations adjusted for incompleteness on the basis of State census reports, inspection records, and State assessors' data. Year-to-year changes during intervening years were determined from special surveys of turkey producers made in January and August of each year, supplemented by State farm-census and inspection records. There are no check data on production for the country as a whole, but annual farm censuses in 8 States collect data on turkeys raised. In several States a check is obtained from sales and inspection records; some of these cover a major part of total production. Annual estimates of production began in 1929. Annual slaughter includes numbers sold and the numbers consumed on farms, estimated independently. In recent years live turkeys have averaged about 17 pounds per bird at time of sale, allowing for weight differences among breeds and between hens and toms. Dressed weight (only blood and feathers off) is estimated at 91 percent of the live weight, eviscerated at 75 percent. Recent changes in marketing practices to greater emphasis on ready-to-eat poultry make a changeover of the published series to this basis desirable. Therefore, both bases are given for supply and distribution in 1947-52.

Annual supplies of turkey for domestic civilian consumption were ascertained by adjusting farm slailghter (no nonfarm production) for changes in cold-storage holdings, by adding imports, and by subtracting Department of Agriculture deliveries and military takings. Separate data on exports of turkeys are not available. Cold-storage holdings of turkeys have been available since l916, imports since 1930, and Department of Agriculture deliveries and military procurement since 1941. See table 58.

## Dairy Products 42/

Estimates of consumption of milk and of individual manufactured dairy products were developed from a variety of data, including farm production of milk, use of milk as fluid milk and cream, output of the several manufactured dairy products, and data on stocks, military procurement, and foreign trade. The series for major individual milk and dairy products, including the revised series for fluid milk and cream, were estimated directly, that is, independently of the total milk supply. The three tables on total supply and distribution of whole milk, nonfat milk solids, and milk fat solids (tables 65-67) which were computed from total production of milk, including an

42/ Prepared by H. C. Kriesel, Bureau of Agricultural Economics.
allowance for nonfarm output, and milk equivalent of stocks, trade, and so forth, include some milk consumed in unenumerated forms as well as the individual items listed in the separate tables. The several series on per capita rates of consumption for dairy products are shown in tables 9 and 31.

Farm Milk Production; Current Estimates.- Since 1924, estimates of annual production of whole milk $43 /$ have been based on sample returns showing numbers of milk cows and milk produced on individual farms. Milk production on farms in this country is estimated currently for each month, separate estimates now being published for about two-thirds of the States. Estimates of yearly milk production and quantities of milk disposed of in the different outlets available to farmers are prepared annually for each State. Annual estimates of production and disposition of milk in each State are based on indications of commercial milk deliveries, dairy products manufactured, records of milk-market administrators, census enumerations, and other records. In general, the estimates for the main commercial dairy areas appear to have been somewhat more accurate than estimates of production and utilization for areas in which only a few cows are kept and in which most of the milk is used on farms.

The yearly figures of the Department of Agriculture as to numbers of milk cows on farms are based on information from various sources, including census enumerations at 5 -year intervals, semiannual rural mail-carrier livestock surveys, monthly reports from crop correspondents, quarterly reports from dairy correspondents, annual records in some States of cows assessed for taxation, numbers enumerated by assessors, or numbers tested or inspected for disease. Census enumerations are made at varying dates and for various age limits and classifications, but they provide basic information regarding numbers of farms keeping cows, numbers of cows milked and numbers of all milk cows. The livestock surveys obtain records of numbers of milk cows and daily milk production on 125,000 farms. These data are gathered each June and December on cards distributed and collected mainly by rural mail-carriers. The monthly reports from crop correspondents show the numoers of milk cows, numbers milked, and daily production the first of each month, on about 20,000 farms. The quarterly reports from dairy correspondents show current production and utilization of milk, and factors affecting production on about 7,000 farms that produce milk in commercial quantities. Assessment and inspection records vary among States in completeness and classification.

Estimates of production per cow are based on 1 day's production reported monthly by crop correspondents, l day's production reported quarterly by special dairy correspondents, and 1 day's production reported on rural-carrier livestock-survey records. Allowances are

43/ Milk production is defined as all cows' milk drawn, whether marketed, used on farms, or fed on farms, but excludes milk sucked by calves.
made for the fact that records obtained from the first two sources are from progressive farmers whose skills are better than average and who keep larger herds than are typical.

In earlier years a significant quantity of milk was produced by cows owned by nonfarm residents. The Census of Agriculture of 1920 obtained data on nonfarm milk cows. A sample of counties from the 1930 census provided additional information on this subject. For years prior to 1930 , interpolations were made to obtain approximations of annual output by nonfarm milk cows. No data are available to indicate the trend of output for this milk since 1930. However, on the basis of general information concerning economic activity, population movements and other considerations, the allowance for nonfarm milk production was reduced to less than a half billion pounds by 1952 from the nearly 3 billion pounds in 1930. Within a few more years, output of milk by nonfarm cows probably will be negligible.

Data on disposition of milk by farmers, such as quantities retained on farms for human consumption, for feeding to livestock, for making farm butter, or for sale as cream or whole milk, are based chiefly on quarterly reports from dairy correspondents and on monthly and annual reports on farm production of butter by crop correspondents. Estimated quantities of milk and cream sold by farmers are checked with receipts of milk and cream by dairy plants, the quantities required to produce manufactured dairy products, and the quantities used in fluid consumption where available.

Farm Milk Production Before 1924. - Data on farm production and disposition of milk have been officially estimated and published only since 1924. These data are released in April of each year. 44/For 1909-23, tentative approximations to the general level of milk output were made on the basis of the 1910 and 1920 Censuses of Agriculture, on quantities utilized for manufactured products and for fluid uses, and on the basis of certain considerations relative to producing conditions. These figures are believed to show general trends fairly well, but they are not considered reliable for studies of year-to-year variation.

Consumption of Fluid Whole Milk and Cream. - Of the total supply of milk produced in the United States in the last two decades, between 40 and 50 percent was consumed as fluid whole milk and cream. The percentage was higher in later years than formerly. In recent years, around a fifth of the fluid whole milk and cream was consumed on farms where it was produced. From 1924 to date the series on consumption of fluid milk and cream represents the sum of independent estimates of farm and nonfarm consumption. The farm component consists of estimates of consumption of families on farms not producing milk as well as those on
farms producing milk. Consumption on farms where milk was produced was estimated on the basis of quarterly reports on per capita rates of consumption from dairy correspondents and estimates of the numbers of people living on farms that produced milk. For farms not producing milk, consumption was determined from estimated numbers of people living on such farms and scattered data on per capita rates by the people concerned. The number of farms not producing milk has increased in recent years and indications are that per capita consumption of milk by people on these farms is below the consumption rates of people who live in urban areas and of those on farms with milk cows. The trend in consumption per capita by people on farms without milk production, however, is assumed to be essentially the same as for the rest of the population.

Consumption of fluid milk and cream by the nonfarm population is one of the most difficult items on which to obtain satisfactory information. No regular reporting mechanism for the country as a whole has been devised to compile information on the flow of milk into current fluid uses. The Bureau of the Census has been authorized to obtain this kind of information for the first time in connection with its 1953 Census of Manufactures; previously that Bureau had collected no data relating to volume of fluid milk processed and sold. Data on consumption of fluid milk have been obtained for a number of years in a few large markets where Federal marketing orders have been in operation. In recent years the number of such areas with marketing controls has been substantially increased, reaching 49 in early 1953. In the administration of these controls, data are collected on receipts of milk from farmers and on sales of whole milk, skim milk products, and fluid cream. But a significant limitation on the use of these data is the difficulty of obtaining data on population for areas which exactly match the marketing areas affected by the individual orders. In recent years, data on milk consumption also have been available for some States as a byproduct of the administration of the State milk-control laws.

A special research study whose purpose was to obtain more comprehensive and accurate estimates of consumption of fluid milk in nonfarm areas of the country was recently completed under authority of the Agricultural Marketing Act (RMA, Title II). This project was designed to estimate consumption of milk in 1944, using data on 114 separate milk-marketing areas which were subject to War Food Order 79. This order, which was designed to limit further expansion of sales of fluid milk and cream through the establishment of sales quotas by individual milk distributors, provided data on sales by all distributors in the markets. Per capita rates of consumption for these 114 separate areas were computed on the basis of sales data for the markets concerned and data on population, which were obtained from registration data in connection with war ration books, with adjustments for the farm population and for military personnel on leave. Supplementing these data with returns from Health Officers' surveys, new estimates of milk consumption by States in 1944 were established. The resulting national figure was substantially below the previous estimate for that year. Largely on the basis of data for that one year, the general level of estimates of consumption of fluid milk and cream in this country from 1924 to date
was lowered. (Data for individual States, however, were not developed for years other than 1944.) Year-to-year changes for years before 1940 were kept essentially the same as in the previous series. From 1940 to 1945 some additional new evidence indicated that the rate of increase was moderately less than the previous published series showed.

For 1909-23, estimates of per capita consumption of fluid milk and cream were derived on the basis of tentative approximations to the quantity of milk produced (farm and nonfarm) for food, as described above, and the quantities used for manufactured whole-milk products, with adjustments for net imports of fluid milk and cream. Collection of data on stocks of fluid milk and cream was not begun until 1930.

For some purposes, such as computation of the nutrient content of the food supply, it has been necessary to use separate data on the product-weight of whole milk and of cream consumed, rather than the milk equivalent of the two items combined. Only rather recently have data become available to indicate the relative magnitudes of these two items. For the period ending in 1941, it was assumed that of the total equivalent of fluid milk and cream consumed, 80 percent was whole milk and 20 percent cream. After 1941, under wartime conditions and controls, the cream component declined to an estimated 14 percent in 1944. There appears to have been a rise to 17 percent for 1946-48, with a subsequent falling off to 15 percent in 1951 and 1952.

Fluid Skim-Milk Products and Buttermilk.- Substantial quantities of fluid skim milk are consumed in this country, either in the form of skim milk as such, or as products made from skim milk, such as cultured buttermilk and chocolate-flavored drinks. Large quantities of fresh (or natural) buttermilk still are consumed on farms, mainly in the South. Among the nonfarm population, there has been a substantial shift from fresh buttermilk to the cultured product. Consumption of chocolateflavored drinks made from skim milk apparently began in the early twenties and has increased markedly, especially in recent years.

Large quantities of skim milk are used here for animal feed and for other nonfood purposes. Consequently, there is no firm basis for estimating the quantities of skim milk used directly for food, such as that for whole milk or cream. Data have been collected from special dairy reporters to ascertain the quantities of buttermilk and skim milk consumed per person in households of farmers. The per capita quantities consumed in 1946 were estimated and applied to the number of people on farms with milk cows. The aggregate quantities for each calendar year, 1909 through 1946, were calculated by assuming the same per capita rates for skim milk and buttermilk as were estimated for 1946. It was assumed that the consumption rate declined slightly after 1946.

For the nonfarm population, the quantities of skim-milk items consumed were based on results of consumer-purchase surveys and on records from milk-marketing areas for recent years. The per capita levels of recent years were extended back toward 1909, with adjustments in accordance with general information as to the trends in the volume of the respective items. The aggregate quantity consumed by nonfarm people
was determined in each case by multiplying the estimated per capita level by the number of persons. An increasing volume of data is becoming available on consumption of liquid skim-milk products in conjunction with the administration of milk marketing regulations. Moreover, the intensive study for 1944 previously referred to in connection with whole milk, also provided data on the combined quantity of skim-milk products consumed per person. The per capita rates for the skim-milk products shown in table 31 are equal to the total obtained for 1944 in the above survey.

Manufactured Dairy Products. - Data on production have been obtained for an increasing number of manufactured dairy products since reporting of such data began during World War I. For many major products, estimates have been made and released monthly. For some of the less important items, monthly data on quantities produced are made and released after the close of the calendar year. For most products, the first release is based on a sample of plants which manufacture these items. The final data are based on complete enumerations of all plants in the United States that produce dairy products. In recent years, somewhat more than 11,000 plants have been engaged in processing milk or cream into various items.

During most of the period available data from the Department of Commerce have been used for the figures on exports and imports of the different products. But during World War II, that Department did not get complete data on exports, because certain types of noncommercial vessels did not file usual shipping documents. So, for this period, available data from the Department of Agriculture on program operations were used as a basis for the estimates of foreign shipments.

During World War II, the quantities taken by the military forces were estimated from military-procurement records for all dairy products, except fluid milk and ice cream; for these two items reported figures were obviously understated. Thus, for these two products, the data shown in the tables were calculated on the basis of probable consumption of each item per person in the Armed Forces, as indicated by some survey data.

Butter Consumption. - Estimation of the consumption of butter is described in the section on fats and oils.

Cheese Consumption. - Estimates were made of the supply and distribution of American cheese, cheese other than American made of whole milk and part skim, full skim cheese, and cottage, pot, and bakers' cheese.

In an earlier publication $45 /$ data on total and factory production of cheese in this country were published for the period ending with 1917. For 1918-39, the United States estimates of cheese production
were recently developed using data from the Bureau of the Census, State departments of agriculture, and the Bureau of Agricultural Economics, Department of Agriculture. For the period 1940 to date, production estimates are those originally published by the Bureau of Agricultural Economics. Production of cheese on farms was relatively small from 1909 onward and gradually declined so that by 1927 it was estimated that no appreciable quantity of cheese made from whole milk was produced on farms. For the period 1909-17, the estimated total quantity of cheese produced was apportioned between American and other cheese in accordance with the relationship that existed between the two items from 1918 to 1922.

Data on cold-storage stocks of cheese have been estimated by the Department since 1916 and are now published monthly in the Cold Storage Report, issued by PMA. This report covers holdings of cheese in commercial warehouses. Practically all imports consist of types other than American. When the types were not reported separately, it was assumed that all imports were cheese other than American.

Cheese Made from Skim Milk.- The Bureau of Agricultural Economics has estimated production of full-skim American cheese from 1919 to date, on the basis of enumerations. For the period before 1919, data from the Census of Manufactures on production of skim-milk cheese were used as a basis for interpolation for years between censuses. In recent years, production of this item has been small. There are no data on storage stocks of this product or on foreign trade. It was assumed that the quantity produced each year was consumed during the year. Production of cottage, pot, and bakers' cheese has been officially estimated back to 1920. For years before 1920, production was approximated on the basis of census data for 1909-14. It was assumed that the total quantity of cottage cheese produced off farms was consumed by the nonfarm population. Data on consumption of cottage cheese, provided by consumerpurchase studies, indicated that in recent years consumption by farm people was about 50 percent greater than consumption by nonfarm people. In earlier years, however, the ratio of farm to nonfarm consumption probably was greater. For this study, it was assumed that from 1909-19, per capita consumption on farms was twice that for nonfarm people. From 1920-29, it was assumed that consumption on farms was 75 percent greater than nonfarm consumption. The per capita quantities of cottage cheese given in table 31 are averages for the entire population, as computed by this procedure.

Condenised and Evaporated Whole Milk. - Collection of production data for condensed and evaporated whole milk was begun in 1919. The data as published were used back to that time. For years before 1919, output of the different items was based on interpolations between census years 1909 and 1914 and BAE data for 1919. Data on manufacturers' stocks were collected beginning with 1919. These data are available only for the canned items. It was assumed that the quantity of the bulk product produced during the year was consumed in that year. Exports and imports were not reported separately for all years for condensed and evaporated milk, respectively. For years when the two products were reported in a combined figure, and separate figures were wanted, distribution was made
in accordance with the relative quantities of each product in the total in the immediately following years.

Dry Whole Milk. - Production of dry whole milk began on a very small scale early in this century. The Bureau of Agricultural Economics has estimated production of this product, by months, from 1918 to date. Before 1918, annual production was determined on the basis of the BAE estimate for 1918 and the Census of Manufactures report for 1914. Figures on manufacturers' stocks have been available since the early twenties.

Exports and imports of dry whole milk were not reported separately from other dry milks throughout the period. For years in which combined figures were reported, the quantity of dry whole milk involved was determined according to the relative quantity of this item in the tocal in years when separate reports were made.

Ice Cream. - There is practically no commercial storage nor international trade in ice cream. Thus, the quantity of ice cream consumed in each calendar year is essentially equal to the quantity produced in that year. Data on production of ice cream have been collected from 1916 to date. For 1909-15, production was estimated on the basis of census of Manufactures data for 1914 and BAE data for the later period. 46/ For 1916-39, production reported by the Bureau of Agricultural Economics was recently revised to allow for incomplete enumerations. The basis for these revisions was provided by data from the Census of Manufactures, State departments of agriculture, and the Bureau of Agricultural Economics. The data for 1940 to date have been changed only as necessary to incorporate minor current revisions.

Production data on ice cream are published in terms of gallons. These were converted to product-weight, assuming a gallon of ice cream weighed 4.7 pounds through 1942, 4.6 pounds in 1943, 4.5 pounds from 1944.45 and that this weight had increased to 4.8 pounds by 1952. Information as to the supply and distribution of ice cream on a product-weight basis is given in table 65. Production and consumption of ice cream in terms of gross and net quantities (computed on fat-solids basis) of milk used also were estimated. A considerable part of the fat and some of the nonfat milk solids used in making ice cream are provided in the form of butter and condensed whole milk. For some purposes, it is useful to have the net quantity of milk used in making ice cream. This was obtained by subtracting from the gross quantity used, the quantity of milk (fat solids basis) equivalent to the condensed whole milk and butter used in making ice cream. The series on net milk used in making ice crean, as well as on the quantity contributed by condensed milk and butter, is issued annually by the Bureau of Agricultural Economics in the publication, F'arm Production, Disposition, and Income from Milk. 47/

In recent years milk products have been used in an increasing number of frozen desserts. E'stimates of production of milk sherbet -
one of the older of this group - have been made since 1932. Estimates have also been made of production of frozen custard, frosted malted milk, and ice milk, although part of the statistics on these products was recently discontinued. In the last few years the output of frozen dessert in which varying quantities of nonfat milk solids and vegetable oils or fats are used in place of milk fat has increased. At present, the making of this product is legal only in Illinois, Missouri, Oklahoma, and Texas, and estimates of production have been made only for 1952. Approximately 11 million gallons were produced in these four States in that year.

Malted Milk. - Production of malted milk in this country has been fairly steady during the last three decades. Official data on production of malted milk began with 1918. These data, as published by the Bureau of A.gricultural Economics, have been used for the years since then. For years before 1918, estimates were based on trends from the quantity reported in the 1.914 Census of Manufactures and the output reported by BAE for 1918. No information is available concerning stocks of malted milk. Exports of malted milk, through 1944, were reported with information on baby foods, and so forth. But for this analysis, the entire quantity was assumed to be malted milk. Beginning with 1945, data on malted milk were included with figures on a few minor items also. But, as in the period before 1945, the entire quantity was assumed to be malted milk.

Manufactured Skim-Milk Products. - Many products are manufactured from skim milk, buttermilk, and other byproducts of the milk-processing industries. Some are for food and some for nonfood purposes. Only the more important food products are considered in this study.

Nonfat Dry Milk Solids (Dry Skim Milk). - Data on production of nonfat dry milk solids in this country have been collected by the Bureau of Agricultural Economics since 1918. Beginning with 1935, the quantities produced for food and nonfood uses have been reported separately. The total quantity produced was distributed between food and animal-feed types for the years before 1935 on the basis of the relative quantities of each produced in 1936-40. Production of nonfat dry milk solids for years before 1918 was not estimated, but their domestic use as food apparently was probably equivalent to a small fraction of a pound per person.

Information as to manufacturers' stocks of nonfat dry milk solids has been published since 1930. As this is a relatively nonperishable item, it is probable that large but varying quantities have been held by establishments other than the original manufacturers. Thus some error is introduced in the computation of domestic consumption. In several years, exports and imports of nonfat dry milk solids were reported along with quantities of other dairy products. It was necessary, therefore, to make certain assumptions as to composition of the combined totals in order to obtain approximations of foreign trade in this item.

A considerable proportion of the byproducts of cheese and butter, respectively, has been dried or condensed. Estimates of total production of dried whey began in 1937; estimates of condensed or evaporated butternilk have been made since 1920. It was assumed for purposes of this study that about 15 percent of the quantities of each of these items produced annually was used for food purposes. The per capita figures shown in table 31 are based on this assumption. There are no data on stocks of these items. Exports of dried whey are not reported separately, although small quantities were exported after World War II. No condensed or evaporated buttermilk was presumed to have been exported.

Total Milk. - For a number of years the supply and distribution of all dairy products have been combined on the basis of their fat content and expressed in terms of the equivalent of whole milk. The total production of milk, including nonfarm output, was taken directly from data of the Crop Reporting Board. For other components of the supply and the breakdown of distribution, factors indicating the ratio of the butterfat in individual commodities to the fat content of whole milk were applied to the detailed data on the foreign trade, stocks, and military takings of each dairy product. The products were then totaled to obtain the whole milk equivalents shown in table 65 .

Because of the divergent movements which have occurred in recent years in the consumption of dairy products, tables 66 and 67 were developed to measure the supply and distribution of milk fat and of nonfat milk solids, respectively. The estimates of production of milk fat consist of the reported farm output of milk fat plus an estimate of the fat content of milk produced off farms, obtained by applying the percentage of fat contained in farm milk to the data on nonfarm output of milk. The data on milk fat stored, imported, exported, and procured by our Armed Forces were computed by applying factors indicating the percentage of milk fat contained in each dairy product to the detailed data on supply and distribution of all individual dairy products and totaling the quantities. Civilian consumption of milk fat was estimated as the residual item of disappearance after foreign trade, military takings, and changes in stocks were considered. Table 67 contains comparable estimates for the nonfat milk solids contained in dairy products, including nonfat dry milk solids. For this table, factors were assembled from the Bureau of Human Nutrition and Home Economics, the Bureau of Dairy Industry, and other sources which indicate the percentage of nonfat milk solids contained in each product. These factors were applied to data on milk production, and to available data on stocks, foreign trade, military procurement, and civilian consumption of each dairy product and the results were totaled. In this table nonfood use of nonfat milk solids is the residual item.

Fats and 0ils 48/
Food fats and oils include butter, margarine, lard, shortening, and a miscellaneous group consisting mainly of vegetable oils used in

[^3] Sid̄ney J. Armore and Edgar L. Burtis, formerly BAE.
mayonnaise, salad dressing, and salad and cooking oils. The estimated disappearance of food fats includes their use in bakery goods, confectionery, commercial frying as in the manufacture of potato chips, fish canning and nut salting and roasting, as well as their direct use in hotels, restaurants, institutions, and homes.

Estimates of domestic disappearance of food fats and oils represent disappearance from factories and warehouses. Disappearance differs from consumption because of changes in distributors' and consumers' stocks, for which data are not available. In some years, the difference between consumption and disappearance may be considerable; the years 1941 and 1950 are extreme examples. An important part of the sharp rise in domestic disappearance during those years probably was due to a substantial increase in inventories not included in reported stocks.

Domestic disappearance of edible fats and oils is estimated by subtracting from the total available supply, the following: Exports and shipments to Alaska, Hawaii 49/, Puerto Rico, and (beginning with 1935) the Virgin Islands; indirect use, as lard in shortening and soap; and factory and warehouse stocks at the end of the period. Total supply is represented by the sum of domestic production, imports, and factory and warehouse stocks at the beginning of the period. Prior to 1948 disappearance of margarine was computed from reported withdrawals from manufacturers' stocks.

Detailed information for the individual items follows. The supply and distribution data are given in tables 68-73.

Butter.- Production of butter, both on farms and by creameries, is estimated by the Bureau of Agricultural Economics. Total output from 1909 to 1916 was estimated from data in the Census of Manufactures and the Census of Agriculture by interpolation on the basis of market receipts at New York and Chicago. 50/For 1917 through 1938, data on creamery production of butter have been recently revised, including estimates by States using information from State departments of agriculture, Censuses of Manufactures, and original data gathered by the Bureau of Agricultural Economics, with adjustments for incompleteness. The data for the period 1939 to date represent virtually complete enumeration.

Production of butter on farms was approximated for 1909 through 1923 from information in the Censuses of Agriculture. Since 1924 it has been estimated by the Bureau of Agricultural Economics on the basis of reports from voluntary cooperators. These reports were received monthly from about 5,000 farmers in 13 major farm-butter-producing States and annually from about 15,000 farmers in the remaining States. Census of Agriculture data were used as benchmarks for these estimates.

49/ Shipments to Alaska and Hawaii have not been subtracted since March 1948 because they are no longer reported. 50/ See footnote 45, p. 63.

Some butter formerly was used in margarine production. Quantities so used were excluded from the estimated civilian disappearance of butter to avoid duplication. Estimated quantities of butter used in margarine before 1922 were averages of fiscal-year data from records of the Bureau of Internal Revenue (1913-14 through 1916-17), the Institute of Margarine Manufacturers (1917-18 through 1919-20), and reports of the Commissioner of Internal Revenue (1920-21). 51/ Figures for 1912 and 1913 were based on the trend of the fiscal-year data in later years. Calendar-year totals of the quantity of butter used in margarine production in 1922-49 are totals of monthly data published in the Internal Revenue Bulletin. $52 /$ Since 1930, practically no butter has been used in margarine.

Lard 53/.- Lard is primarily a byproduct of pork production. The lard yield per 100 pounds of carcass weight of hogs slaughtered is generally determined by the weight of each hog, the degree of its fatness, and the percentage of the available raw fats which is used in producing lard. Using the same parts or cuts of the carcass, the yield of lard increases with the weight of the animal. Some of the parts rendered for lard, however, have an alternative use as pork (in the form of fat cuts) and the proportion of these parts rendered into lard varies largely in accordance with the demand for these cuts as pork. The parts or cuts which have alternative uses are the fatbacks and plates and, to a lesser extent, the jowls together with the trimmings containing some lean meat which can be used in the mar.facture of sausage. Owing to variations in the use of the different cuts and in the weights and fatness of hogs slaughtered, the yield of lard may range from as little as 5 percent to a possible maximum of 20 percent or more of live weight.

Total production of lard is made up of production in federally inspected establishments, in wholesale and retail establishments not under Federal inspection, and of lard produced on farms. About threefourths of the total output of lard in recent years has been produced in federally inspected establishments, with the remainder about equally divided between farm-rendered lard and that produced by wholesalers and retailers not under Federal inspection.

Yearly estimates of lard production in federally inspected establishments, 1899-1920, were based on records of the number of hogs slaughtered by these establishments, available data on hog marketings and weights, and the Census of Manufactures. From 1921 to 1936, monthly production of lard by these plants was computed by the U. S. Department of Agriculture on the basis of average monthly yields reported by a 90- to 95percent sample of packers and the records of the number of hogs

51/ U. S. Bureau of Internal Revenue. Annual Report of the Commissioner ... 1920-21. Washington, D. C.

52/ U. S. Bureau of Internal Revenue. Internal Revenue Bulletin. Cumulative. Monthly l922-date. Washington, D. C.

53/ Charles A. Burmeister, formerly with the Production and Marketing Administration, collaborated in the preparation of this section.
slaughtered under Federal inspection. Since 1937, production of lard in federally inspected establishments has been reported monthly by the Federal Meat Inspection Service of the Department.

Estimates of annual output of lard by wholesalers and retailers not under Federal inspection, 1899-1945, were based on reports of the Census of Manufactures and other data on hog marketings, weights, and slaughter. Since 1945, this series has been based on monthly reports from these slaughterers compiled by the U. S. Department of Agriculture. Census reports on livestock slaughter and meat and lard production in all wholesale establishments were published every 5 years fron 1899 to 1919, and biennially thereafter through 1939, when they were temporarily discontinued until 1947 because of the war. A census of retail slaughter was taken in 1909 and in 1929.

The yield of lard in nonfederally inspected wholesale and retail establishments, 1899-1939, was estimated at 12 percent of the live weight of hogs slaughtered in these establishments, compared with a 1921-39 average of 14.5 percent in federally inspected plants. This estimated yield of lard was based on the relationship of yields reported by the Census of Manufactures to yields reported by federally inspected establishments.

Monthly reports on production of lard (as well as number and live weight of hogs slaughtered) by nonfederally inspected wholesale and retail slaughterers were begun in December 1945. Reports for 1946 showed a lard yield of 8.5 percent for wholesale plants. It is recognized that 1946 was a year of relatively low production of lard in both federally and nonfederally inspected plants. This reflects the practice during World War II years of leaving more fat on meat cuts and rendering fewer fat cuts for lard. In view of these findings, the lard yield of 12 percent used for earlier years for wholesale and retail slaughter not under Federal inspection was revised downward for 1940-45. Yield was estimated at 10 percent for 1940 and 1941, 9.7 percent for 1942, 9.0 percent for 1943, and 8.5 percent for 1944-46. Reports for 1947 to 1949 indicated an average yield of about 10 percent for nonfederally inspected wholesalers and retailers. This average rose to 11 percent in 1950-51 and tends to substantiate the larger yield percentage used in prewar years.

Annual production of lard on farms, 1899-1945, was estimated on the basis of estimated number and live weight of hogs slaughtered by farmers. Number and live weight of farm hog slaughter were based, in part, on reports of the Census of Agriculture and, in part, on yearly surveys of farm slaughter and other data relating to hog production and marketing, collected by the Department of Agriculture. The Census of Agriculture was taken every 10 years before 1919 and every 5 years thereafter. Since 1945, the annual farm surveys made by the Department of Agriculture have included specific questions on lard production and these data were used in estimating quantities of lard produced on farms. The annual samples were obtained by mail questionnaires received from approximately 75,000 livestock producers. Before 1943, average weights of farm
slaughter were based on available data on hog marketings and production. Since 1943, these have been based on regular reports from about 70,000 crop and livestock reporters on the number and total live weights of hogs slaughtered.

Farm production of lard, 1899-1941, was estimated at 15 percent of the estimated live weight of farm-hog slaughter. This yield was based on information as to methods commonly used by farmers in utilizing the products obtained from hogs.

The survey in 1946 made available, for the first time, reported data on lard produced on farms. This survey indicated that there was an average lard yield of 13 percent. As locker plants and deep-freeze units gradually became available to farmers, methods of handing hog products on the farm changed greatly and a smaller proportion of the products were converted into lard. This reduced the yield of lard in relation to live weight. The yield percentage of farmer-produced lard was revised to 14 percent for 1942 and since then has averaged slightly more than 13 percent, compared with 15 percent used previously.

Relatively small quantities of lard have been used in most years in the manufacture of margarine, shortening, soap, and other products. For 1912-23, quantities used in margarine, shortening, and soap were estimated. For 1924-30, the estimates include lard used in margarine and shortening manufacture only. Since 1930 the Bureau of the Census has reported the use of lard in manufactured products, including minor quantities going into such uses as printing ink, lubricants, and greases.

Use of lard in margarine manufacture before 1922 was estimated by averaging fiscal-year data reported by the Bureau of Internal Revenue (1913-14 through 1916-17), the Institute of Margarine Manufacturers (1917-18 through 1919-20), and reports of the Commissioner of Internal Revenue (1920-21).54/ Estimates for 1912 and 1913 were based on the trend of data in subsequent fiscal years. Beginning with 1922, calendaryear totals of the quantity of lard used in margarine have been obtained from monthly data published in the Internal Revenue Bulletin through June 1950 55/, since then from Bureau of Census reports. Fiscal-year totals were published in the annual report of the Commissioner of Internal Revenue.

Consumption of lard in the manufacture of shortening was compiled by the Fats and Oils Division of the U. S. Food Administration 56/ for 1912, 1914, and 1916-18, from a survey made during 1917 and 1918. Consumption of lard in shortening manufacture during 1920-23 was

54/ See footnote 51, p. 69.
55 See footnote 52, p. 69.
56/ United States Department of Agriculture. The Production and Conservation of Fats and Oils in the United States. U. S. Dept. Agr. Bul. 769, Sup., 7 pp. 1919.
estimated by the U. S. Tariff Commission 57/ from data obtained in 1924 from producers representing about 80 percent of total production of shortening. The 1929 estimate was prepared by the U. S. Tariff Commission from a special report by the Bureau of the Census on the consumption of various oils in specified industries during 1929. This report did not segregate consumption in the shortening industry. 58/ The 1929 figure assumes that all the animal oils reported as used in food industries other than margarine manufacture were consumed in making shortening. Estimates of use of lard in shortening for the other years during 1912-30 were made by BAE on the basis of trend. This use since 1930 has been regularly reported by the Bureau of the Census. 59/

Since 1946 the use of lard in shortening has increased sharply and in 1951 it comprised 10 percent of all lard consumed compared with 1 percent in 1946. Most of this probably was lard processed and packaged in much the same way as hydrogenated vegetable-oil shortening, rather than (as in earlier years) lard mixed with other fats to make a "compound" shortening.

Consumption of lard in soap for 1912, 1914, 1916, and 1917, was compiled by the U. S. Food Administration from its survey. Estimates of lard used in soap for the other years in 1912-30 are based on the trend in the percentage of lard to total fats and oils used in soap manufacture during 1912, 1914, 1916, and 1917. It appears that very little, if any, lard was used in soap manufacture during 1924-30, for the trend in previous years was sharply downward. Beginning with 1931, the quantity used in soap has been regularly reported by the Bureau of the Census. 59/

Margarine. - In collecting Federal taxes on margarine until July l, 1950, the Bureau of Internal Revenue required monthly reports on production and shipments by manufacturers. 60/ These reports were the basis of data published by the Bureau on production and "withdrawals." Withdrawals represent quantities of margarine withdrawn from manufacturers' supplies - that is, shipments to distributors - and were classified into three categories: (l) Tax-paid withdrawals for use in continental United States and Territories (Alaska and Hawaii); (2) tax-free withdrawals for export, including shipments to Puerto Rico and the Virgin Islands, and shipments by the Armed Forces to personnel stationed abroad; and (3) taxfree withdrawals for use of the Federal Government. Before 1941, withdrawals for use of the Federal Government were considered to be entirely for Federal institutions in continental United States. In 1941-47, these withdrawals also included procurement by the Armed Forces for personnel

57/ U. S. Tariff Commission. Report to the Congress on Certain Vegetable Oils, Whale Oil, and Copra. Report No. 4l. 240 pp .1932.

58/U. S. Bureau of the Census. Factory Consumption of Animal and Vegetable Fats and Oils by Products. Annual preliminary report, 1929. Washington, D. C.

59/ U. S. Bureau of the Census. Animal and Vegetable Fats and Oils: Production, Consumption, Imports, Exports and Stocks. Reports by quarters and annually 1919-22 to June 1949; since then, monthly and annually.

60/ See footnote 52, p. 69.
in the United States and by the USDA for the Red Cross, for export to our wartime allies, and for shipment to Puerto Rico and the Virgin Islands.

Through 1947 domestic disappearance was computed from tax-paid withdrawals by subtracting shipments to Alaska and Hawaii, as estimated from reports of the Bureau of the Census, and adding use in Federal institutions. Withdrawals for use in Federal institutions in 1941-47 were estimated at a million pounds annually. Beginning in 1948, domestic disappearance was computed from data on production, stocks, foreign trade, and military procurement.

Exports, 1909-40, were estimated by subtracting shipments to Puerto Rico from total tax-free withdrawals.for export. Shipments to the Virgin Islands were not deducted from exports until 1935, in order to make them consistent with the export data used in the supply and disposition tables for the other fats and oils. Since 1941, exports have been from Bureau of the Census reports, which do not include shipments to Alaska, Hawaii, Puerto Rico, or the Virgin Islands.

Estimates of margarine shipments to U. S. Territories began in 1923. Reported statistics on shipments before 1923 were not classified in sufficient detail to afford a basis for estimates of margarine. Shipments to Alaska in 1923-39 were estimated at 50 percent of "other animal fats and oils, edible". Shipments of margarine to Alaska were separately reported in 1940. In 1941-47, all edible animal fats and oils shipped to Alaska were reported in one group and margarine shipments were estimated at 10 percent of this total group. Shipments to Hawaii in 1923-36 were estimated at 93 percent of "other animal fats and oils, edible," shipped to this Territory. From 1937 to March 1948 margarine was reported separately. Shipments to Alaska and Hawaii have not been reported since March 1948. Shipments to Puerto Rico were estimated at 95 percent of "other animal fats and oils, edible" shipped in 1923-27; for subsequent years, 1928-52, these shipments were separately reported. Official statistics on exports before 1935 included shipments to the Virgin Islands. After 1935 (except for 1937-39), margarine shipped to the Virgin Islands was included with shipments rather than exports and was reported separately In 1937-39, 100 percent of the miscellaneous group of fats shipped to the Virgin Islands was considered to be margarine.

Shortening. - Statistics on shortening have been reported under differing titles as: Lard substitutes, lard compounds and other lard substitutes, lard substitutes and cooking fats, vegetable oil-lard compounds, shortening other than lard, and hydrogenated shortening. The varying nomenclature reflects somewhat the development of the shortening industry. After the introduction of the steam-rendering process in the middle of the 19th century, whole carcasses, except for the hams, were rendered for lard in the western part of the United States because long-distance transportation costs were too high for all but the choicest cured meats. As this "whole hog lard" was softer than kettle-rendered lard from intestinal fats to which consumers were accustomed, it was stiffened by the addition of a hard fat, usually lard stearin. This practice led to the gradual emergence of the lard-substitute industry.

After the growth of the margarine industry in the latter part of the 19th century, large supplies of oleostearine, a byproduct in the manufacture of oleo oil for use in production of margarine, were available and were used to stiffen steam-rendered lard. Following the rapid development of the cottonseed-oil industry during the same period, substantial quantities of this oil were used with oleostearine and lard in the manufacture of so-called lard compounds. Later, compounds were made from mixtures of stearine or edible tallow and cottonseed or other vegetable oils, with or without lard.

The shortening industry gradually shifted after 1909 from production of lard compounds to production of vegetable shortenings, as a result of the introduction of the hydrogenation process into the United States in that year. 6l/ It was possible, with this process, to produce shortening entirely from vegetable oils and the trend has since been in that direction. At first, vegetable shortening was mostly made of hydrogenated cottonseed oil but since the early 1930's soybean oil has become increasingly important in shortening manufacture and in 1944 it became the principal vegetable oil used in shortening.

Table 71 contains data on the supply and distribution of shortening starting with 1912. Adequate data on production are not available for earlier years. Shortening production has been reported since 1922 by the Bureau of the Census.62/ Before 1922, production was not reported regularly. The Fats and Oils Division of the U. S. Food Administration 63/ compiled shortening-production data for 1912, 1914, and 1916-18, from a survey made during 1917 and 1918. Production for 1913 and 1915 was estimated by the Bureau of Agricultural Economics on the basis of the trend in the reported years. Production for 1919 was estimated on the basis of the total value of all shortening production reported in the Census of Manufactures and the average value per pound of shortening produced by the meat-packing industry. 6l/ The 1920 production was estimated by the Bureau of Agricultural Economics from U. S. Tariff Commission estimates for 1920 and 192164 / and the 1921 Census of Mañufactures.65/

Shipments of shortening for $1912-22$ represent reported quantities of lard compound shipped to Hawaii and Puerto Rico. Shipments in 1923-27 represent reported shipments of lard compound to Alaska, Hawaii, and Puerto Rico, plus estimated shipments of vegetable shortening which was not reported separately. These estimated shipments are 50 percent of reported "other vegetable fats and oils, edible" shipped to Alaska, 85 percent of this group shipped to Hawaii, and 80 percent of this group

61/ See Weber, G. M., and Alsberg, C. L. The American Vegetable Shortening Industry, Its Origin and Development. Leland Stanford Junior Univ. Food Research Inst. Fats and Oils Studies 5, 359 pp. 1934.

62/ See footnote 59, p. 72.
63/ See footnote 56, p. 71.
$64 /$ See footnote 57, p. 72.
65/ See footnote 34, p. 45.
shipped to Puerto Rico. For 1928-32, shipments include reported quantities of lard compound and vegetable oil-lard compound shipped to Hawaii and Puerto Rico, plus reported quantities of lard compound and 50 percent of "other vegetable fats and oils, edible" shipped to Alaska. Shipments in 1933 and 1934 represent.reported quantities of lard compound and vegetable oil-lard compound shipped to Alaska, Hawaii, and Puerto Rico. To these were added, in 1935-40, reported data on shipments of vegetable oil-lard compound to the Virgin Islands. Before 1935, shipments to the Virgin Islands were reported with exports to foreign countries. For 1941-47, total estimated shipments comprise reported shipments to Hawaii, Puerto Rico, and the Virgin Islands; 75 percent of reported total vegetable fats and oils, edible, shipped to Alaska; and quantities shipped in 1942-45 by the U. S. Department of Agriculture to Puerto Rico and the Virgin Islands under special wartime programs. Shipments in 1948 were reported for Puerto Rico and the Virgin Islands and estinated for Alaska and Hawaii by BAE on the basis of data for earlier years. Beginning in 1949 shipments refer only to Puerto Rico and the Virgin Islands.

Other Edible Fats and Oils. - This category includes principally cottonseed, peanut, soybean, corn, edible olive oils, and oleo oil, oleo stock, oleostearine, and edible tallow. These are generally described as "edible oils" and are used in the manufacture of salad and cooking oils, mayonnaise, and salad dressings, in canning fish and soup, and in processing potato chips and salted nuts. Production, factory and warehouse stocks, and use of these fats and oils in nonfood products have been reported by the Bureau of the Census since 1930. From these data and from information on foreign trade, domestic food disappearance was calculated.

Some of the so-called inedible oils - for example, coconut, babassu, palm-kernel, and palm oils - have some food uses. For example, coconut oil is used by the confectionery and baking industries. The quantities of such oils used for food each year were estimated from data on factory consumption plus some allowances for other uses.

Beginning with 1931, the Bureau of the Census has reported factory consumption of fats and oils according to end products.66/ This gives a firm basis for the computation of disappearance in "other edible" uses. For the years before 1931, considerable estimating was necessary both in the basic source material and by the Bureau of Agricultural Economics. Annual use of oils and fats in soap in 1922-30 was estimated by the U. S. Tariff Commission.67/ Annual use of soybean oil in paints, varnishes, linoleum, and other drying-oil products, 1922-30, was estimated by BAE as 25 percent of total domestic disappearance of soybean oil. Other basic data were firmer. The Bureau of Internal Revenue published monthly data on use of fats and oils in margarine for the period 1922 through June 1950.68/

Because substantial quantities of these fats and oils are used in the manufacture of shortening and margarine, which are reported separately in this bulletin, these quantities were deducted in deriving estimates of the domestic disappearance of other edible fats and oils.

## Fruits and Nuts 69/

Statistics on production of fruit cover 19 important kinds of fruits and berries and 4 kinds of tree nuts grown commercially in this country. Statistics on production in some States began as early as 1889 for apples; 1899 for peaches; 1900 for cranberries; 1909 for cherries, pears, grapes, apricots, plums and prunes, figs, olives, grapefruit, oranges, lemons, walnuts, and almonds; 1918 for strawberries; 1919 for dates, limes, and pecans; 1924 for avocados and pineapples; and 1927 for filberts.

The published statistics represent total production of these fruits, berries, and tree nuts in all the important commercial producing States, with the exceptions of apples, cherries, plums, and strawberries, for which estimates are limited to the commercial crop. To arrive at total consumption of these items, allowance was made for production in States not included in the reported commercial crop, using Census of Agriculture data. Statistics on total production of apples were available from 1889 through 1938, and for the commercial crop alone they have been available since 1934; commercial apple production accounted for about four-fifths of our total production of apples in 2949 , according to the Census of Agriculture. In several States where production of some of these fruits is somewhat minor, and for other minor fruits in any State, no estimates of production are made. Although strawberries and cranberries are covered by production statistics, other berries and small fruits - raspberries, blackberries, blueberries, elderberries, loganberries, boysenberries, youngberries, gooseberries, and currants - are not covered. Production in backyards and vacant lots of cities and towns is not covered.

Despite these limitations, statistics on fruit production in the United States cover nearly all the important domestic tonnage. This is more true for the last two decades and generally so for the l920's. But production data were less complete, both as to items and states included, for earlier years. Hence, production data for 1909-18 are not strictly comparable with similar data for following decades. However, for total production of fruit and even for the principal individual items, they are useful for indicating general trends and levels. They are less reliable for making comparisons between individual items in any one year or for the same item between 2 consecutive years. Producetin of fruits, berries, and tree nuts has changed over the years with respect to kinds, varieties, quality, areas of production, and quantity. Thus comparability diminishes somewhat with the passage of time.

The principal source of statistics on production of fruits and tree nuts is the Crop Reporting Board of the Bureau of Agricultural Economics. Separate estimates are made for each State for important fruits and tree nuts grown there. State totals include total production on farms for all counties, except for apples and strawberries. Over the years, States have been dropped in the case of some fruits, as production declined to an insignificant percentage of the national total, and other States have been added as production increased. Hence, if production of fruit in some States was small, no estimates were made. But such omissions are not important in relation to the United States totals, which are the summations of the separate estimates of the State totals.

In preparing estinates of production of fruit, indications of the size of the current year's crop in relation to the previous season and in relation to normal are obtained by sending mail schedules about the first of each month during the growing season - beginning with May for deciduous fruits and October for citrus - to a list of informed farmers and country dealers who are well distributed. These sample data are supplemented by information obtained by the crop statistician in each State through personal contact with informed individuals and actual observations of the prospective crops in the orchards or vineyards. Records of shipments by railroads and trucking concerns, quantities inspected by State or Federal inspection services, reports of processors as to quantities canned, dried, manufactured into wine, juice, and cider, have been used extensively as checks on production and utilization of fruit crops. At the season's end, comprehensive mail surveys of crop utilization have given other valuable indications of production and utilization.

At 5-year intervals the enumeration of the Census of Agriculture has given a relatively complete coverage of number of trees and vines, and production for 1 year in 5 . These census figures served as benchmarks for adjusting estimates of the Crop Reporting Board and for making estimates in succeeding years, especially for several minor fruit States where comprehensive checks on shipments and processor utilization were not available.

Fresh Use.- The quantities of fruit used in the farm household where grown and the quantities sold have been determined by the Crop Reporting Board from reports received from growers. Fruit sold for fresh use and that sold for processing have been determined principally from reports on rail, boat, and truck shipments, reports from processors, and inspection reports. Reports of certain fruit associations also were used. Such utilization figures have ordinarily been prepared and published at the close of each fruit season.

Estimates relating to the utilization of fruit within the farm household and to that sold for fresh use and for processing - canned, dried, frozen - were available for most fruits beginning with 1909 in reports of the Crop Reporting Board. Statistics on utilization as far back as 1909 were fairly complete for California, where most processing of fruit in this country is done. Estimates for fruit utilized in
various ways were prepared for other States whenever considerable quantities were used other than in fresh form. All pineapple produced in the United States was considered as used fresh and all dates and olives as processed. Utilization data were not available for strawberries, although substantial quantities are frozen and some are canned. In some States all production of some fruits was considered as used fresh. In those cases where separate utilization data were not available, but data were available on packs of processed fruit, such pack data were converted to a fresh-fruit-equivalent basis and then deducted from total production in order to arrive at a figure for the quantity used fresh.

Quantities of fruit used in households of farms where grown were considered as used fresh and were added to the quantities sold for fresh use, to obtain the total quantities from domestic production that were for fresh use.

Preserves, jams, jellies, fruit butters, and marmalades constitute a group of fruit spreads, the manufacture of which draws upon fruit material from various sources. Some material comes directly from commercial fresh fruit and some from the commercial packs of frozen and canned fruits. Such material is included among the consumption figures relating to fresh, canned, and frozen fruit. But some probably comes from unreported production of fruit. Hence such fruit material is not included in the reported consumption of fruit. But the latter may comprise a minor part of the total fruit material made into fruit spreads. In recent years, commercial production of fruit spreads has been about 3.5 to 4 pounds per capita. Consumption probably has been about the same. Fruit material comprised about a third to half of the fruit spread. The rest consisted of sugar and other ingredients.

Statistics on cold-storage stocks of fresh apples and pears are obtained as of the first of each month by the Production and Marketing Administration of the U. S. Department of Agriculture. For this purpose data are collected from public, private, and semiprivate warehouses and" from apple houses. The series for apples begins January l, 1915, and the series for pears begins July 1, 1923.

Quantities of fruit imported from foreign countries or shipped into the United States from Territories were added to domestic supplies in order to obtain figures on total supplies (table 74). Bananas constituted the largest volume of fruit imported for fresh use and were the only important fruit entirely of foreign origin for which supply and distribution figures were calculated. Other fresh fruits imported for fresh use comprised only small percentages of total supplies of the individual fruits. Among imports of processed fruits, those of canned pineapple, pineapple juice, olives, and dried figs and dates were most important. Because inshipments from Hawaii and Alaska have not been reported since March 1948, it was necessary to estimate the quantities of canned pineapple and pineapple juice for 1948 to date. Estimates were based on trade data showing the proportion of Hawaiian packs shipped to the mainland in recent years.

Data on foreign trade were principally from the Department of Commerce and data on quantities used or handled by the military were based on reports from the military services. Shipments to Hawaii and Alaska since March 1948 were approximated on the basis of the rates of the years before 1948. Adjustments in military and foreign trade data were made for some World War II and early postwar years to allow for transfers from military stocks to UNRRA and for other quantities used by the Arrny for civilian feeding in occupied areas.

Statistics relating to the supply and distribution of tree nuts were handled similarly to the handling of those for fruits generally. Statistics were available beginning 1909 on imports of the four domestic tree nuts - almonds, walnuts, pecans, filberts - and on other tree nuts Brazil, cashews, pignolias, pistache, chestnuts, and miscellaneous tree nuts. In recent years total imports have comprised about two-firths of total supplies. Data on exports, which constitute only a small percentage of domestic production, were available beginning with 1922. All trade data were on a fiscal-year basis, and came from the Department of Commerce. No data were available on stocks. Despite these limitations, the figures on supply and distribution, including consurnption, provide a fairly useful series beginning 1909. With the inclusion of export data beginning 1922, the series are more complete and are generally satisfactory. But the figures for 1909-21 are not fully comparable with the later figures.

Statistics on domestic production of tree nuts are on an unshelled basis, while figures on imports are reported partly on an unshelled and partly on a shelled basis. Data on consumption were computed on a shelled-weight basis. To arrive at the shelled-weight or kernel yield of tree nuts reported in the shell, these percentages were used: Almonds, domestic, 45 percent 1909-49 and 50 percent beginning 1950; imports, 50 percent. Filberts, domestic, 45 percent 1909-49 and 40 percent beginning 1950; imports, 45 percent. Pecans, domestic, improved varieties, 40 percent; seedlings, 36 percent; imports, 36 percent. Walnuts, domestic, 39 percent; imports 42 percent. Chestnuts, 84 percent. Pignolias, 77 percent. Brazil and pistache nuts, 50 percent. Cashews, 22 percent. Miscellaneous other nuts, 40 percent.

Statistics on civilian disappearance or consumption of fruits, berries, and tree nuts, were calculated as residuals after all other distribution outlets of total supplies were taken into account. Such residual figures contain whatever errors there may be in the supply and other distribution figures. Errors probably are largest for series on individual items of fresh and processed fruits and least for series for the various groups. Series on individual items and groups undoubtedly are less trustworthy for showing year-to-year changes than for showing levels for different periods of time and trends over several decades. For the latter uses, they probably are generally satisfactory.

Processed.- Statistics on dried fruits cover apples, apricots, dates, figs, peaches, pears, prunes, and raisins. Statistical series on production begin with 1909 for all these fruits except dates, for
which they begin with 1916. Such statistics were obtained mainly from the estimates of the Crop Reporting Board, Dried Fruit Association of California, Giannini Foundation of Agricultural Economics, and the trade publication, Western Canner and Packer. 70

For purposes of calculating supply and distribution figures, the production figures, which are reported on a natural-condition basis, were converted to a processed-weight basis to allow for losses in cleaning, adjustments for moisture standardization, and the like. Statistics and calculations on foreign trade, stocks, and apparent consumption also were carried through on a processed-weight basis.

Data on packers' stocks of dried fruits at the end of season, 1920-41, were from the Giannini Foundation of Agricultural Economics. For $1942-45$ data on stocks of both packers and wholesale distributors were from the Department of Cormerce. Beginning with 1946, only data on packers' stocks, compiled by the Production and Marketing Administration, have been available. No adjustments were made for unavailable data on stocks. In prewar years distributors' stocks probably did not change very much from year to year. To the extent that this was so, the calculated figures on consumption show fairly accurately levels and trends in consumption of both individual dried fruits and total dried fruits. Since 1946, changes in distributors' stocks may have had a greater bearing on actual consumption.

Statistics on frozen fruits deal with apples and applesauce, apricots, red sour cherries, sweet cherries, grapes, peaches, pineapples, plums and prunes, fruit juices, miscellaneous fruits, strawberries, blackberries, raspberries, blueberries, loganberries, elderberries, boysenberries, youngberries, gooseberries, and currants. Figures on pineapple include production in Hawaii, for which separate data are not available. Such production is still relatively small. Statistics have been available for the commer ial pack only. That is to say, data were not available on the quantities frozen by such industrial users as hotels, bakeries, and confectioners, and hence such quantities were not included. Fruits and berries frozen in the homes or in community frozen-food locker plants also were not included. But practically all of the fruit frozen by industrial users and some of that frozen by homemakers was counted with the quantities used "fresh." Although statistics on total commercial pack were available beginning with 1925, data on individual items began first with 1937, the year of rapid expansion in the pack. Beginning with 1937, the data have been fairly complete and constitute generally comparable series.

Statistics on packs of frozen fruits for prewar years were taken fron Western Canner and Packer. 70/ Those for war years were based primarily upon data and reports of the Department of Commerce, Department
of Agriculture, National Association of Frozen Food Packers, and Office of Price Administration. Statistics on frozen fruits and fruit juices for postwar years were from reports of the National Association of Frozen Food Packers, Florida Canners' Association, and surveys by the Production and Marketing Administration for California-Arịzona production.

Quantities of frozen fruits, fruit juices, and berries held in commercial cold-storage warehouses have been reported, as of the end of each month, by the Production and Marketing Administration. Statistics on total stocks at the end of each year were available beginning with 1924. But beginning with 1937, data on stocks were available for the important individual items as well as the total.

Statistics on canned fruits cover apples and applesauce, apricots, cranberries and cranberry sauce, other berries, cherries, olives, peaches, pears, pineapple, plums and prunes, fruit cocktail and fruit for salad, figs, and citrus segments. Pack data for most of these items started with 1909; but those for cranberries started with 1919, those for citrus segments in 1921, and those for fruit cocktail and salad in 1923. Data on pineapple shipments from Territories started with 1910 and data on imports began in 1923.

Pack statistics for the early years, 1909-22, for some canned fruits and up to 1932 for others, were obtained from various sources or were derived in various ways. Such early sources included the Census of Manufactures, Western Canner and Packer $71 /$, and estimates by the Giannini Foundation of Agricultural Economics.72/ Among the derived pack figures, those for apricots for 1909-20, for example, were calculated by converting the quantities of fresh apricots that were reported by the Crop Reporting Board as used for canning to a net canned-weight basis. Pack figures for later years through 1941 were obtained almost entirely from the National Canners Association. For the war years, 1942-45, estimates of the packs were made in a manner similar to that for frozen fruit; that is, they were based upon the reports of Government and private agencies. Thereafter pack statistics were from the National Canners Association. Although derived in various ways, the figures on packs of canned fruits for 1909-28 do give a general view of the composition and size of the pack. Figures beginning in 1929 are believed to be fairly complete, accurate, and comparable.

Data relating to receipts of canned pineapple from Hawaii, which constitute the principal off-shore supplement to the domestic pack, were those from the Department of Commerce until March 1948, when they were discontinued. Since then, receipts have been estimated upon the basis of the size of the Hawaiian pack. Export data on canned fruits came from the Department of Commerce. Beginning January 1, 1922, such

71/ See footnote 70, p. 80.
72 / Shear, S. W. Deciduous Fruit Statistics. January 1939 - January 1942. Giannini Found. Agr. Econ. Mimeogr. Rept. 66, 69, 76, 79.
data were available for peaches, cherries, pears, plums and prunes, and pineapples. Similar data for apricots began with 1923, apples and applesauce with 1924, fruit cocktail with 1929, and grapefruit with 1931.

Statistics on stocks of canned fruits were not available for 1909-20. Figures on packers' stocks at the end of the season were available for peaches and apricots, 1921-33, and pears, 1922-33, from Deciduous Fruit Statistics of the Giannini Foundation of Agricultural Economics.73/ Similar data for cherries, 1930-33, were available from Western Canner and Packer. Data on season-end stocks of canned fruits held by packers and wholesale distributors, including chain-store warehouses, 1934-46, were available for all canned fruits, except olives, coming from the Department of Commerce. Such data also were available for the same fruits for January 1, 1943-47. Beginning 1948, data on packers' stocks of the most important fruits are reported by National Canners Association, and wholesalers' stocks similarly by the Department of Commerce. The deficiencies in data regarding stocks for both the early and the more recent years limit somewhat the comparability of related supply-anddistribution figures for the several periods (table 75).

Canned fruit juice statistics begin as early as 1909. Fruit juices now covered include grape, pineapple, apple, prune, fruit nectars, grapefruit, orange, tangerine, lemon and lime, blended orange and grapefruit juice, citrus concentrate, and other fruit and berry juices. Grape juice was the principal fruit juice packed during 1909-28. For these years estimates of the pack were based upon shipments of grapes to grapejuice plants in the producing areas in New York. For 1929-41, pack statistics were from the Census of Manufactures, and beginning with 1942 they were from Western Canner and Packer.

Concerning other canned-fruit juices, pack statistics began with 1928 for grapefruit juice, 1929 for orange juice, 1934 for lemon and lime juice, prune juice, and fruit nectars, 1935 for blended orange-andgrapefruit juice, 1939 for apple juice, 1940 for citrus concentrate, and 1945 for tangerine and other fruit and berry juices. Statistics on slipments of canned pineapple juice from Territories to the United States began with 1933.

Data on packs of apple juice were from the National Canners Association; those for other deciduous fruit juices were taken from Western Canner and Packer; and those for citrus juices were from reports of the Florida Canners' Association, Texas Canners Association, and the Production and Marketing Administration. 74/ Data on receipts of pineapple juice from Hawaii were from the Department of Commerce. With the discontinuance of such data March 1948, receipts have been estimated, based upon the size of the Hawaiian pack.

[^4]Data on stocks of most canned noncitrus fruit juices held by packers and wholesale distributors January 1, 1942-47, were from the Department of Commerce. For earlier years, beginning 1934 for grape juice, such stock figures for these noncitrus juices were estimated upon the basis of the $1942-46$ average percentage relationship between stocks on January 1 and production of the preceding year. Since late 1947 data have not been available on stocks of these fruit juices, and no estimates have been made to cover probable stocks. For canned orange, grapefruit, and blended orange-and-grapefruit juice, data on stocks held by packers for years before 1934 were from Canned Citrus Fruit Segments and Juices issued by the U. S. Department of Agriculture.75/ Data on stocks of these three juices held by both packers and wholesale distributors, 1934-46, were from the Department of Commerce. Beginning with 1947, data on packers' stocks were from the Production and Marketing Administration and the Florida Canners Association, and those on distributors' stocks were from the Department of Commerce. Figures on stocks of canned lemon and lime juice for years before 1942 were estimated in the same way as those for noncitrus juices. For 1942-46, data on packers' and wholesale distributors' stocks were from the Department of Commerce. Beginning with 1947, only data on packers' stocks of lemon and lime juice were available; they have been obtained from the citrus industry through surveys conducted by PMA. Data on stocks of citrus concentrate were not available, and no estimates were made.

Statistics on packs of canned-fruit juices, 1909-28, were rough approximations of the probable actual size of pack, because of the indirect method of estimation. Pack statistics for 1929-41 were somewhat better but they involved some uncertainties because it was not always known whether the reported statistics were in terms of standard cases of 24 No. 2 cans or in actual cases. Pack statistics beginning with 1942 are believed to be fairly complete, accurate, and satisfactory; these were years of rapid expansion in pack of canned citrus juices. The pack figures, as established beginning 1909, on the whole do give a good idea of composition and trends. Data on stocks were most complete and satisfactory for the years 1942-46. But even with the deficiencies of earlier and later years, the figures on total supplies and distribution, including consumption, give a fairly useful measure of supplies and distribution over the years (table 76).

## Vegetables 76/

Fresh Vegetables. - Fresh vegetables are grown commercially both in areas shipping to distant markets and in local market gardens for sale in the fresh form. They are also grown in farm and nonfarm gardens for home use. Commercial production for fresh market formerly included principally those crops grown for shipment to more-or-less distant markets. Most of the important growing areas near the large cities that consume much of the produce are now also covered in the official estimates.

75/ Ibid.
76/ Prepared by Herbert W. Mumford, Jr., Bureau of Agricultural
Economics.

In order to obtain total commercial production of vegetables for fresh sale, it was necessary to add to the regularly reported data for individual crops, estimates of unreported output, that is, of major vegetable crops in areas not covered and of minor crops in all areas. For 1909 through 1918, staff members of the Department have developed judgment approximations of aggregate annual fresh-market production of vegetables, taking into account such indications as were available from the 1910 Census, average annual pasture condition as an indication of weather, and the trend in total production of fresh-market vegetables after 1918. Although no claim is made as to the precision of the total estimates for individual crops either as to level or year-to-year change, it is felt that these approximations in the aggregate are reasonable indications of the general level of fresh vegetable supplies from commercial production and of trend in this early period.

More reliance can be placed on the data from 1919 forward. Official estimates of commercial production of vegetables for the fresh market for 1918-38, inclusive, as published by the Crop Reporting Board, BAE, covered primarily production in well-recognized cormercial areas producing mainly for shipment to distant markets. For 1939-52, the revised official estimates are more inclusive, covering all fresh-market production on acreage grown primarily for sale of all major vegetables and melon crops, complete for the States and the crops reported, whether for distant markets or for local sale. Production of major vegetable crops for fresh market in relatively unimportant producing States and production of minor vegetable crops in all States are not covered by the 1939-52 series of estimates. Production for home use from farm and nonfarm gardens is not included in the commercial (for sale) production estimates for either 1918-38 or 1939-52.

For 1919-38, estimates have been developed to cover the unreported production in all three categories: (1) Local market (market-garden) production of major vegetables, (2) production of major vegetables in the relatively unimportant producing States, and (3) production of minor vegetables in all States. For 1939-52, estimates of unreported production were required only for items (2) and (3) since the published estimates covered, for the crops and States reported, all local-market production as well as production for shipment to distant markets.

In the development of estimates of unreported production, consideration was given to acreages of all vegetables grown for sale as reported by the census for 1919, 1924, 1929, 1934, 1939, 1944, and 1949. Adjustments of acreage were made, based largely on the degree of coverage by the census compared with the published estimates for the crops and States covered in the regular program of reports. Yields on the unreported acreages were based partly on yields on acreages regularly reported and partly on data obtained from special surveys of selected northeastern and midwestern local-market vegetable areas, made with funds provided under the Agricultural Marketing Act of 1946 (RMA, Title II). Acreages and yields were interpolated for the intercensal years and annual national estimates of unreported production were computed from these acreages and yields. These estimates of unreported production (as well
as estimates of greenhouse proauction) were added to the official estimates of production, to give total commercial fresh-market production.

Estimates of total commercial production of vegetables for fresh market for 1919-52 include allowances for greenhouse production of vegetables for fresh sale.

Whereas the official Crop Reporting Board estimates of acreage, yield, and production of major vegetables and melon crops grown conmercially for fresh market are published monthly, with appropriate seasonal breakdowns, the estimates of total production of commercial vegetables for fresh market are available only in the form of national totals on an annual basis.

Although the estimates of unreported production, 1918-52, are necessarily rough approximations, a large part of the estimated total production of fresh-market vegetables is covered by the regular official estimates. Furthermore, the proportion covered by the official estimates increased steadily during the 35 years. In 1919 official estimates were made for 16 vegetable crops for fresh market which accounted for only 50 percent of the estimated total production. By 1929 the number of crops regularly estimated had increased to 25 and the percentage of total production covered had risen to 69 percent. In 1939 with 27 crops estimated, and with the estimates revised to include all local-market production, the official estimates account for 77 percent of the total production. By 1949 the official estimates covered 28 crops and 82 percent of the total production for fresh-market sale. Production of minor vegetables, not covered in the regular program of reports, is of relatively minor importance, ranging from 10 percent of the total in 1919 to 13 percent in 1949. Additional crops and additional States will be added to the regular program of official estimates, if and when development of the vegetable industry brings such crops and States into sufficient prominence.

Information for official estimates of commercial production of fresh vegetables is obtained principally from two sources: (1) Some 15,000 schedules are mailed each month during the growing season to correspondents who report progress of their own crops, harvested acreages, and yields per acre. These correspondents also give their opinions of conditions in their localities. (2) Information obtained by statisticians from State field offices of the Crop Reporting Service who travel through producing areas, making personal observations and interviewing "key" men acquainted with conditions in their localities. These "key" men are principally well-informed growers and shippers who grow vegetables for a livelihood and so are interested in having reliarle data as to the industry throughout the country. Other "key" men include local bankers who help finance growing operations, managers of local cooperatives or shipping associations, county agents, United States Department of Agriculture market news reporters, railroad station and agricultural agents, and State marketing officials. From information obtained through interviews with these men, the representatives assemble information for each area on acreage at planting time, on the progress of the crop during the growing season, and on yield per
acre and production at harvest time. Data obtained from these two sources are built up into State and national totals which are subsequently checked in various ways: With carlot rail-shipment data; with truck unloads in 19 large cities (the number of cities varies from year to year), with auction receipts and assessors' data in some States; and in some instances, with sales of fertilizer and seed. A few States, including Arizona, Florida, and California - all three important vegetablegrowing States - maintain virtually complete records of the quantities of important vegetables shipped out of State by motortruck.

In developing estimates of per capita consumption of certain fresh vegetables, a deduction has been made from the reported commercial production to cover the farm-weight equivalent of vegetables canned, frozen, or dehydrated, for which no separate official estimate of production for commercial processing is made. Production not harvested because of economic conditions also has been deducted. (See table 79.)

The farm-garden output of vegetables for farm-home consumption was formerly included with conmercial production in the supply and distribution estimates. Because the information available for use in estimating the output of farm gardens is so much less satisfactory, the rough approximations of per capita consumption of vegetables from this source are now included with supplies from nonfarm gardens, as described in chapter 3 and given in table 36.

The only items for which statistics on stocks of fresh vegetables were used in developing estimates of annual domestic consumption were cabbage, onions, potatoes, sweetpotatoes, dry beans, and peas. Periodic reports for cabbage, onions, and potatoes - prepared during the year by the Crop Reporting Board - show the combined stocks on farms and in commercial storage in producing areas. Similar reports formerly were made for dry beans and peas. Farm stocks are based on sample reports from individual growers. Stocks in commercial storage represent complete enumerations in a few States; in most States they are estimations based on returns from a very large sample of commercial storage concerns. Little or no data are available on stocks in retail channels or in nonproducing States.

Estimates of stocks held on January l were developed individually for all except dry peas. The Bureau of Agricultural Economics has published official estimates of January l stocks of dry onions beginning in 1918, and of cabbage beginning in 1922. The per capita consumption series for individual fresh vegetables began in 1918. Stocks of cabbage were ignored for the period 1918 through 1921. Beginning January 1, 1953, January l stocks of cabbage are reported for New York State only.

The data on foreign trade, derived from official reports of the Bureau of the Census, include shipments from Puerto Rico beginning in 1938. Shipments to the Territories are included throughout the period except for those to Hawaii and Alaska since March 1948 when reporting ceased.

Estimates of purchases of fresh vegetables by our Armed Forces in 1941 and 1942 were based on Navy issues per man per day in this country. Beginning with 1943 they were based on reported procurement by market centers and some supplementary information on local purchases.

Potatoes, Sweetpotatoes, Dry Beans, and Peas. - Throughout the entire period production of potatoes, sweetpotatoes, dry beans and peas has been estimated officially by the Crop Reporting Board from data on harvested acreages and yields per acre. These estimates were checked with acreages and yields enumerated every 5 years in the Census of Agriculture. The intercensal estimates were based primarily on mailed inquiries returned by the voluntary crop reporters of the Crop Reporting Board and the returns from about 200,000 farmers who report on the rural mailcarrier surveys made in cooperation with the Post Office Department. These sample survey data were collected and analyzed by State statisticians. In some States the annual estimates are checked against data from annual enumerations by assessors. Reports from inspectors, warehousemen, and trade handlers such as cleaners, dealers, and processors, and carlot-shipment records and recorded truck movement provide a further check on production estimates for some States. Estimates have been revised every 5 years in line with data from the Census of Agriculture. Nonfarm production was not included in total production as it is believed to be relatively unimportant, but estimates of per capita consumption of vegetables from nonfarm sources are given in table 35.

Reports on farm disposition - that is, quantities used in the farm household, quantities fed to livestock and lost through shrinkage and waste, quantities used for seed, and quantities sold - have been made annually. These are based primarily on returns from mailed inquiries regarding individual farm reports on disposition. In these inquiries farmers are asked to report the quantity produced, the quantities sold, and the quantities used on the farm for each item of disposition. Wherever possible, sales have been checked against reports of processors, or by records of handlings, such as shipments by truck, railroads, and steamships.

The supply and distribution data for dry edible beans incorporate without distinction the use of beans in canned form, baked, or in soups, as part of the total consumption. Nonfood use shown is as reported by the Crop Reporting Board.

For white potatoes, stocks at the beginning of the calendar year, shown in table 84 were estimated so as to include: (1) Merchantable potatoes left in the hands of local dealers in the producing area on January 1 that would be marketed for all purposes; (2) the quantity of potatoes saved and used for seed on farms where produced, and (3) 40 percent of the potatoes estimated as consumed for food on farms where produced. Merchantable potato stocks from 1929 to date were published estimates of the Bureau of Agricultural Economics.77/ Stocks for
earlier years were backward projections by staff members of BAE, based upon the relationship between January 1 stocks of potatoes and the size of the crop in important surplus late States in years reported.

January 1 stocks of sweetpotatoes are not officially estimated by the Department. For these tables they were computed by subtracting monthly sales prior to January 1 from the total quantity sold in the crop year by States; they represent estimated stocks held by growers. Estimates of monthly sales by States have been made by the U. S. Departmint of Agriculture beginning with the 1908 crop. Sales by months in 1908-17 were presumed to have followed the average pattern shown in the years immediately following 1918. This pattern was used in estimating monthly sales for these earlier years.

For 1942 through 1946, stocks of dry edible beans on January $l$ were approximations based upon the Bureau's published estimates of September 1 stocks 78/, with the addition of estimated sales in the pereceding January through August, plus the homegrown seed saved out of the previous year's crop on farms where produced, plus an assumed percentage of the quantity consumed out of the previous year's crop on farms where produced. Since 1946, no official estimate of Septernber 1 stocks has been made, but rough approximations were made by BAE after consultation with the Grain Branch of PMA. From 1922-41, the September 1 stock figures were developed from limited data supplied by trade sources. In the years before 1922 the September l stocks were ignored; therefore, in effect, they were assumed to remain constant. Estimates of monthly sales by States have been made by the Department beginning with the 1919 crop.

Stocks of dry peas were computed for January 1 in a way similar to that used with dry beans for recent years. When these rough approximations were combined with other items of supply and distribution, the results were so unsatisfactory that supply and distribution on a cropyear basis has been used for dry peas.

Processed Vegetables.- Estimates of the supply of canned vegetables were based on pack data for most items. Before 1919, pack data for most vegetables were available for 1909 and 1914 from the Census of Manufactures. Data regarding the total pack for $1910-13$ and 1915-18 were computed on the basis of the relation existing between the aggregate pack of corn, green peas, and tomatoes (for which annual estimates have been available since 1909 from the National Canners Association) and the total vegetable pack as reported in the census. Comparable interpoltions were made for the noncensus years since 1919. In 1942-45 detailed and complete reports on packs, shipments, and stocks were made each month by all packers to the Department of Commerce under wartime control programs. Since that time, packs of major vegetables have been estimated at least once each year by the National Canners Association.

Production of pickles and sauerkraut was estimated on the basis of reports of the Crop Reporting Board on production of vegetables for processing.79/ In fact, such estimates are made for nine other vegetables, but pack data were used whenever available. The 11 crops reported by the Department of Agriculture $80 /$ account for 90 percent or more of the total canned vegetable pack. AII of 2,000 commercial processors (approximate) are circularized in the spring after they have made contracts with growers for their crops. About 80 to 85 percent of the acreage of vegetables for commercial processing is contracted for in advance. From information supplied by the reporting processors, estimates of total production for processing are prepared. Through the season, reports on the progress of crops are made by the processors. After the harvest, final reports are received on total tonnage canned, frozen, or otherwise processed.

Official information on January l stocks of canned vegetables was not available until 1943 when holdings were reported at the end of each month to the Department of Commerce and the Office of Price Administration. However, end-of-season stocks for most items held by commercial canners have been estimated by the National Canners Association for 1921 to date. Some information on stocks held by distributors (not including retailers) was developed for $1934-42$ by the Department of Commerce. After the termination of the wartime reporting system in the spring of 1947, the Bureau of the Census of the Department of Commerce set up a sample of wholesalers who have reported their holdings of five major canned vegetable items in cases snaller than and larger than No. 10 cans. Supplemental data were obtained for a total of 14 vegetables from wholesalers in connection with projects of the Agricultural Marketing Act (RMA, Title II) for January l, 1948 and 1949, including information broken down into five groups of can sizes. Since 1949 the Bureau of the Census has continued to collect data on distributors' stocks for 14 vegetables, but with the 2 -can size break described above.

Information on commercial stocks and foreign trade was not available before 1921 so the estimates of total consumption of canned vegetables were made on the basis of pack data only. For 1921-42 consumption was computed from data on packers' stocks, foreign trade, and packs on a pack-year basis. Since January 1943, availability of stocks at the beginning and end of each calendar year has permitted the estimates to be made on a calendar-year basis. The data on per capita consumption of individual items derived on a pack-year basis have been prorated to obtain estimates of calendar-year consumption rates for years before 1943 (table 18).

From 1937 through 1943 data on frozen vegetable packs were obtained from the Western Canner and Packer. Information for subsequent years

79/ U. S. Bureau of Agricultural Economics. Truck Crops for Commercial Processing. Monthly. (Processed.)

80/ Asparagus, lima beans, snap beans, beets, cabbage for kraut, sweet corn, cucumbers for pickles, green peas, pimientos, spinach, and tomatoes.
was from data of the National Association of Frozen Food Packers. These estimates were used in deriving the domestic consumption of frozen vegetables. Stocks of frozen vegetables in commercial cold storage are reported to the Department of Agriculture.

Consumption of baby foods and soups from 1934 through 1945 is as estimated by the Department of Commerce.81/ Before 1934, data were based on annual packs as given by the Census of Manufactures, with interpolations for intercensal years. Since 1946, no national annual data have been available for canned soups, but data on annual pack and packers' stocks have been supplied for canned baby foods by the National Canners Association.

## Cereal Products 82/

The information on supply and distribution of cereal products was developed from data on production, trade, and stocks of the grains, use of grains in flour and other products, and nonfood uses. Data in appendix tables $88,90-94$ are expressed in terms of grain equivalents, but the data in tables 23 and 89 are in terms of the primary cereal products, such as flour and breakfast foods.

Statistics of production of the various grains are derived from estimates of acreage and yield per acre. Estimates of acreage are based on benchmark data supplied by the agricultural censuses taken every 5 years by the Bureau of the Census.

In intercensal years, indications of change in acreages are obtained from approximately 200,000 individual farmers through the cooperation of rural mail carriers. These are supplemented in each State by returns to mailed inquiries and other indications of acreage or production, such as annual State assessors' enumerations, frontage measurements by crop meter, carlot shipments, elevator and warehouse receipts, and other checks on crops.

The census enumeration of acreage and production of individual crops also furnishes benchmarks for yields to which current estimates are adjusted when the census data become available. In intercensal years, estimated yields per acre are based on reports from farmers on the average yield per acre in their localities and on reports of acreage and production of principal crops on individual farms. During the growing season, the yields are forecast from reported condition of the crop.

81/ U. S. Bureau of Foreign and Domestic Commerce. Fruit and Vegetable Canning Industries, 1944-45. U. S. Dept. Com. Prod. and Wholesale Distr. Indus. Ser. 15, 264 pp. 1945.

82/ Material on wheat, rye, rice, and buckwheat prepared by R. E. Post; on corn, oats, and barley by Malcolm Clough, Bureau of Agricultural Economics.

Wheat. - Records of stocks of wheat on January 1 , in all positions now reported, began in 1935. These January l stocks consist of wheat in the following positions, with the date in parentheses indicating when first collected: On farms (1927); in terminal markets (1927); in interior mills, elevators, and warehouses (1935); in merchant mills (1932) ; and Commodity Credit Corporation holdings not otherwise accounted for (1943, when such storage started). For 1909-34, comparable stocks were estimated by the Bureau of Agricultural Economics by starting with July $l$ stocks (themselves estimated from partial coverage) and adding the new crop and July-December imports. From this total was deducted the estimated distribution for the July-December period, which included the quantity of wheat and flour exported and shipped, and the quantity estimated to have been used domestically for food, feed, and fall seeding.

Farm stocks are estimated quarterly from individual farm reports of production and grains on hand. Stocks in terminal markets (commercial stocks) are reported weekly to the Production and Marketing Administration. Stocks in interior mills, elevators, and warehouses, come from sample data from these firms reported to the Crop Reporting Board. Stocks in merchant mills, 1932-44, consisted of the reported figure from the Bureau of the Census for wheat in mills and mill elevators attached to mills, owned by mills and stored for others, raised to represent all merchant mills; figures for 1945 were reported by the crop Reporting Board. CCC stocks not included in reports for other positions, consist of wheat owned by CCC and stored in bins or other storage owned or controlled by CCC; also CCC-owned grain in transit and in Canadian elevators.

Imports include full-duty wheat, wheat imported for feed, and dutiable flour in terms of wheat. They exclude wheat imported for milling in bond and exported as flour; such data were compiled from reports of the Bureau of the Census.83/

Exports and shipments 1909-34 include all wheat and flour exported to foreign countries and shipments to Territories of the United States (including estimates for Alaska and Hawaii since March 1948) minus wheat imported for milling in bond; in 1935-40 they include exports of wheat, and flour made wholly of United States wheat, plus shipments, plus domestic wheat and flour used with foreign wheat in milling in bond. Data for 1909-40 were compiled from reports of the Bureau of the Census. For the war years, shipments of the U. S. Department of Agriculture for stockpiling in the Territories were added to reported census totals. Deliveries of wheat, flour, and other wheat products by the Department of Agriculture include exports under lend-lease and other foreign-aid programs, to cash-paying Governments, às well as shipments to the

83/ United States Department of Commerce. The Foreign Commerce and Navigation of the United States and other official records of the Bureau of the Census.

Territories. Wheat, flour, and other products used for civilian relief in occupied areas are carried with other military takings, measured at the time of procurement. Although military procurement of fiour was reported for most of the war period, purchases of bread had to be estimated on the basis of surveys of naval shore stations and Army-baking facilities in this country.

The nonfood items in domestic disappearance include wheat used for seed, alcohol, and feed. The quantity used as seed is reported by the Crop Reporting Board. The quantity used for alcohol was estimated by the Bureau of Agricultural Economics as the quantity withdrawn from the wheat supply rather than as reported by the Bureau of Internal Revenue when the tax is paid. The quantity used for feed includes that used in mixed commercial feeds and wheat fed on farms other than where grown, as well as wheat fed on farms where grown. This was derived as a balancing item for the computation; hence, considered alone, it reflects errors in other data.

Wheat used for food is considered at the time the wheat is withdrawn for processing rather than when distributed, because complete data on stocks offlour are not available. Ordinarily stocks of flour do not change materially. But in some years relatively large stocks are held by wholesalers and retailers; in other years such stocks are small. Consumption of flour was determined by adding imports of flour to domestic production of flour (flour commercially produced plus an allowance for farm use 84/) and by deducting the following items: Exports and shipments, military procurement, and breakfast food produced in the flour-milling industry. (See table 89.) Commercially produced flour for 1909-39 was estimated by the Bureau of Agricultural Economics largely on the basis of census figures as adjusted by the Food Research Institute. For 1940 to date millings reported by the Bureau of the Census were expanded to represent all mills. Revisions for 1940-44 were developed by the Bureau of the Census in cooperation with the Bureau of Agricultural Economics.

Total consumption of flour includes semolina. This food use in 1909-24 was estimated by the Bureau of Agricultural Economics but because of the scarcity of information the series for this period is not considered very reliable. For 1925 to date the series represents production, plus imports, minus exports, of semolina, durum flour, and macaroni products, minus military food use, all in terms of semolina and durum flour.

Total wheat for food includes use in breakfast foods. The estimates of wheat used for breakfast foods before 1931 were made on the basis of only scattered trade information and are not considered very reliable. Beginning with 1931, the series was based on reports of the Census of Manufactures.

84/ Wheat used on the farm consisted of the estimated flour equivalent of wheat ground or exchanged for flour, as reported by the Bureau of Agricultural Economics.

Rye. - Stocks of rye on January 1, 1944, to date consist of (1) stocks on farms and (2) in mills, elevators, and warehouses, both of which were reported by the Crop Reporting Board, and (3) stocks in terminal markets, obtained from reports to PMA. For the years before 1944 only stocks on farms and in terminals were used. Those on farms for 1909 were estimated by the Bureau of Agricultural Economics, but the Crop Reporting Board reported farm stocks as of December 1 for 1909-43. Figures for terminal stocks, 1910-26, were taken from records of the Chicago Board of Trade, and include grain in regularly authorized warehouses at leading grain centers east of the Rocky Mountains, and grain in transit by canals and lakes. Since July 1911 the figures have included stocks at Omaha and in private elevators at Chicago, St. Louis, and Buffalo. Since 1917-21 Canadian rye in bond has been included. Imports and exports, including flour in rye equivalent, were taken from the Bureau of the Census figures.

Food use of rye was computed as rye flour for human consumption, minus exports of flour,minus military procurement. Production of flour for 1935-44 was estimated by PMA and BAE on the basis of the production of rye flour reported in the periodical, Northwestern Miller 85/, and the Census of Manufactures. Estimates of flour production before 1935 were made by the Bureau of Agricultural Economics on the basis of data from the Census of Manufactures. Flour was converted to rye grain on the basis of 76.1 percent of rye for 1909-44, 77.6 percent for 1946, 79.0 percent for 1947, 79.2 percent for 1948, and 80.0 percent beginning with 1949. Nonfood items for which rye is used include seed, spirits and alcohol, and feed. Seed is reported by the Crop Reporting Board, spirits and alcohol use by the Bureau of Internal Revenue, and the residual is considered to be the approximate quantity fed.

Buckwheat.- Estimates of buckwheat consumption were computed as follows: Production of flour plus that ground for home use (converted from grain at 60 percent) plus imports, minus exports. Flour produced 1909-39 was based on figures from the Census of Manufactures; that produced from 1940 to date was estimated by the Bureau of Agricultural Economics.

Rice.- For rice, the marketing years beginning the previous August in the South and the previous October in California were used for the calendar years. All data are in terms of milled-rice equivalents. (Table 91.) Unmilled rice was converted on the basis of pounds of milled rice (heads, second heads, and screenings, excluding brewers' rice) produced annually from rough rice, using different factors for the Southern States and for California.

Stocks of rice include quantities on farms, in country warehouses, and in mills; in addition, they include USDA holdings outside mills for 1943-51. Farm stocks were reported by the Crop Reporting Board and stocks in country warehouses and in mills and USDA holdings outside mills have been reported by the Production and Marketing Administration.

Information on imports of rice was taken from reports of the Bureau of the Census $86 /$ as was information regarding the exports and shipments of rice. Before 1941 export data were on a marketing-year basis. For 1941 to date a July-June year was used because USDA deliveries and data on military procurement are more complete on such a basis. Because exports and military procurement for July, which is usually the low point of the year in rice marketing, have not differed greatly from one year to another, the use of the July-June year does not affect the results. Exports include exports of rough rice in terms of milled equivalents and exclude shipments by the Armed Forces for civilian relief feeding. Procurement for civilian relief feeding has been included with procurement for the use of the Armed Forces because for certain periods, they were not reported separately. Census data on shipments to United States Territories for April 1948 to date have been supplemented by satisfactory trade information on shipments to Alaska and Hawaii.

Civilian consumption of rice as food in 1935 to date consists of commercially milled rice produced from domestic grain, rice used on farms where grown, quantities milled by custom mills for local consumption, and use of broken rice by brewers. The estimates of rice consumption represent the quantities of rice entering trade channels rather than the quantities actually consumed in each year. In some years relatively large stocks have been held by wholesalers and retailers while in other years such stocks have been small. No reports are available as to the quantities involved. For 1909-2l the use of rice for food was calculated from available data on stpcks, production, imports, exports, seed, and feed. Compared with information for later years, these data are relatively unsatisfactory. The estimates of consumption of rice for food in 1922-34 were taken from annual reports of the Rice Millers Association which has headquarters in New Orleans.

Nonfood use of rice includes use for seed and feed, broken rice used by brewers (other than brewers' rice as such), and the residual which includes drying loss, waste, and unidentifiable errors that occur when rice is converted from rough to milled rice.

Corn, Oats, and Barley Grains.- Production data for corn, oats, and barley harvested as grain have been reported by the Crop Reporting Board for many years. The Board also reports total production of corn including silage, corn hogged off, and fodder. Information on farm stocks of corn and oats has been collected quarterly since April 1926. Farm stocks of barley have been estimated for January 1 and July 1 since 1934 and quarterly since 1939. The Market News Service of the Department has reported stocks of the three feed grains at terminal markets since 1927. Beginning with April 1943 the Crop Reporting Board has compiled a quarterly series of stocks at interior mills, elevators, and warehouses.

Statistics on production, imports, and changes in the quarterly stocks of grains, are the basis for the estimated disappearance of these
grains annually and by quarters. The quantity of grain consumed in this country for all purposes was ascertained by taking from this total disappearance the volume of grain exported.

Information on the use of these grains for various purposes in this country was obtained from many sources - including reports on processing for food and industrial uses as described later, estimates of the Crop Reporting Board for farm household use, and reports on utilization of the grains in production of malt beverages, alcohol, and distilled spirits. Use for seed was estimated on the basis of plantings for the following year. The remainder of the supplies disapparing in a given year is largely for feed, but it also includes other minor uses, and waste.

Corn, Oats, and Barley Products.- The estimated consumption of the cereal products from corn and oats for food in this country is based on the production or sale of these products by the industry with adjustments for imports, exports, and domestic nonfood uses.

Information on consumption of corn sirup, sugar, and starch, was derived from sales data as reported by the Corn Refiners Statistical Bureau for earlier years and as reported by Price, Waterhouse and Company, of New York, for recent years. Sales data, which were reported annually for earlier years and monthly for recent years, were adjusted for industrial and other nonfood use and for exports and military takings.

Estimates of domestic consumption of cornmeal and flour include corn consumed in farm households and the output of commercial mills for civilian food use. Data for 1909-18 were based on: (1) United States Census for 1909 which includes cornmeal and corn flour produced in merchant and grist mills and (2) data published in War Industries Board Bulletin No. 10.87/ The estimated production of cornmeal taken from the above sources for this period was adjusted downward to allow for some duplication with custom milling and for estimated heavier use of cornmeal in this earlier period for livestock and poultry feeding. It was assimed that in this 10-year period considerable quantities of cornmeal were used for feeding poultry and young stock as the commercial mixedfeeds industry was producing at a much smaller volume at that time than in later years. Some cornmeal was used for livestock feed after this period but it was assumed to have been of smaller and in decreasing volume. Data for 1919-39 were based on production of cornmeal and flour in merchant mills reported in the Census of Manufactures. For 1940 to date estimates were based on information furnished by the dry-processing industry to the War Food Administration, and the 1947 Census of Manufactures, rail movement during these years, and corn supplies and marketings. Corn consumed for use in farm households on farms where grown, converted to cornmeal basis, was added to the estimated quantities of cornmeal produced in merchant mills to arrive at the total quantity of cornmeal and flour consumed for food.

87/ Bruning, Harry F. Prices of Corn and Corn Products. U. S. War Indus. Bd. W.I.B. Price Bul. 10, 19 pp., illus. 1919.

Information on prepared breakfast cereals made from corn was based on production data in the Census of Manufactures for 1914, 1919, and every 2 years from 1919 to 1939. Data for 1940 to date were based on reports of cereal industries to the War Food Administration, on the 1947 Census of Manufactures, and on other factors relating to production of cereal preparations.

Quantities of corn products used in the manufacture of malt liquors and other alcoholic beverages were deducted from the food supplies wherever possible and only minor quantities of these products going into such uses remain in the series of consumption for food. Corn grain used in such beverages is reported by the Bureau of Internal Revenue and was excluded from the food supply.

Production of hominy and grits was reported by the Bureau of the Census for 1909, 1914, 1919, 1937, 1939, and 1947. In 1937, 1939, and 1947, the quantities produced for human consumption were reported separately from those for nonfood purposes, but in earlier years the production includes quantities used by brewers in making fermented malt liquor. For the earlier years, estimated quantities of brewers' grits used in producing malt liquors were deducted from the total production to derive an estimate of the quantity used for human consumption. The quantity used for human food in the intervening years was derived by straight-line interpolation between census years. Because of the few years for which data were available on hominy and grits used for human food, the data for most of the years for this series are merely interpolations indicating the general level or trend of consumption and not necessarily the actual consumption figures for each individual year.

The chief food product made from oats is oatmeal. An allowance has been made in recent years for ready-to-eat cereals and infant food processed from oats. Estimates of the ready-to-eat oat cereals and oat infant foods are based on confidential information from the industry. Production of these foods has increased markedly in the last two decades, and they are currently estimated to account for about one-seventh of the total quantity of oats used for food. With the usual adjustments for noncivilian use, the data on consumption of oatmeal were derived from production statistics drawn from several sources. Data for 1909-12 were based on statistics on production of oatmeal given in General Index of Food Prices on a Nutritive Value Basis. 88/ Data for 1913-18 were based on statistics on oatmeal production given in War Industries Board Price Bulletin No. 11.89/ Data for 1919-39 were based on production of oatmeal published in the Census of Manufactures. Data for 1940 to date were based on reports from the industry to the War Food Administration and the 1947 Census.

88/ Pearl, Raymond. General Index Numbers of Food Prices on a Nutritive Value Basis. 131 pp. U. S. Food Admin. 1918.

89/ Willard, Harley R. Prices of Oats, Rice, Buckwheat and Their Products. U.S. War Indus. Bd. W.I.B. Price Bul. 11,23 pp., illus. 1919.

Consumption of food products made from barley include estimated quantities of malt, meal, flour, and pearl barley, consumed as food. Census data indicate that, before 1919, considerable quantities of barley meal were used for food, especially during World War I, but data on this use are not available for later years and it is assurned to have been small since that time. In recent years barley malt has been the principal food use of barley. Malt is used for such purposes as malt extracts, malt sirup, malt drinks, and prepared infant and breakfast foods. The quantity of barley malt used in producing malt liquors or other alcoholic beverages was not included as a food use. The food use of barley malt was based on statistics of the Bureau of the Census on malt production for 1919-39 (with allowance for the quantities reported by the Bureau of Internal Revenue as used in producing alcoholic beverages) and on data published in Barley and Barley Nalt Extracts and References.90/ It was assumed that the utilization of malt for food in 1909-18 was close to the 1919 level. Estimates for 1943-47 were based on reports of the Beverage Division, Special Commodities Branch, PMA.91/ Production of pearl barley was reported by the Bureau of the Census to be about 20 million pounds in 1939, which would have been produced from a little less than a million bushels of barley. Unofficial estimates for a few earlier years were available regarding pearl barley; they indicate that from 1 to 2 million bushels of barley were used for pearling in most of the period covered. The estimates of the quantity of pearl barley expressed in malt equivalent used for food were added to estimated quantities of barley for meal, flour, and malt to arrive at the total quantity of barley products used for human food.

## Sugars and Sirups 92/

Cane and Beet Sugar.- Cane and beet sugars are supplied for domestic consumption in this country by substantial imports and inshipments as well as domestic production. The production data given in appendix table 95 represent the quantity of sugar obtained from mainland beets and cane during the harvesting years, 1909-34.93/ For this period, the data were derived from sugar-beet- and cane-production statistics by means of ratios of raw sugar to sugarcane and sugar beets. Beginning with 1935 the data are on a calendar-year basis. For 1935-38 statistics on deliveries by mainland cane mills were used for cane sugar, but data on beet sugar were based on production reports by beet-sugar processors. Statis.tics on stocks of cane and beet sugar, on receipts, production, and distribution have been collected by the Sugar Branch of the $U$. $S$.

90/ Phillips, C. Louise, and Boerner, E. G. Barley and Barley Malt: Abstracts and References ... 75 pp., illus. Bur. Agr. Econ. 1935. (Processed.)

2l/U. S. Production and Marketing Administration. Special Commodities Branch. Malt Requirements, Production and Stocks. (Processed.)

92/ Prepared by Maxwell Klayman, formerly with the Bureau of Agricultural Economics, and Richard Butler, Bureau of Agricultural Economics.

93/ The harvesting period for mainland cane is October-April, and for mainland beet, July-January.

Department of Agriculture since 1934. Beginning with 1939 reports giving their production were received from mainland cane mills.

The annual reports of Foreign Commerce and Navigation of the United States, issued by the U. S. Department of Commerce, were the source of jmport and inshipment data from 1909 to 1934 , and of export data from 1909 to 1941. The Sugar Branch of the Department of Agriculture has provided the data for imports and inshipments from 1935 to date, and for exports and shipments to Territories from 1942 to date. Data on imports are obtained from records received from importers in connection with the administration of the Sugar Act. Export data are based on reports of deliveries made by primary distributors.

Data on stocks of cane sugar for 1909 through 1933 were taken from the neekly Statistical Sugar I'rade Journal. 94/ Stocks of beet sugar for 1909 through 1913 were estimated from production data of the Department of Agriculture and from the delivery figures of Willet and Gray. Data on stocks of beet sugar from 1914 through 1933 were estimated by the Meinrath Brokerage Company. These data on stocks (described as visible stocks) include holdings of the principal groups of primary distributors, but exclude substantial supplies in the hands of other distributors and users. For 1934 to date, information on stocks was based on reports made to the Sugar Branch by primary distributors.

Holdings of wholesalers, retailers, and industrial users (so-called "invisible" stocks) were estimated by the Sugar Branch on the basis of a sample of these groups from 1938 to mid-1942, and from 1948 to mid1951. From 1942 to 1947 when sugar was rationed, no reports were obtained by the Department of Agriculture on stocks held by secondary distributors and industrial consumers. However, based on information from the sugar-rationing authorities in the Office of Price Administration and from the trade, annual changes in these stocks were assumed to be relatively minor. Data from mid-1951 to date were estimated by the Bureau of the Census on the basis of a statistical sample of secondary distributors and users.

Honey. - Rough approximations of honey production were made by the Bureau of Agricultural Economics for 1919 to 1938 on the basis of trade information. For 1939 much more adequate information was assembled from census data, State license inspection records, survey records, and from leading producers and handlers of honey. Official figures on the number of colonies and production of honey have been prepared and published for each year beginning 1939, using reports from beekeepers on numbers of colonies on hand at the beginning of the honey flow and the quantity of honey produced in apiaries. The number of such reports has increased from a few thousand in the early years to as many as 10,000 in later years.

The Bureau of Agricultural Economics has prepared yearly data on stocks since 1942, based on schedules made out by beekeepers. Stocks were reported as of November 15 in 1942 and 1943, and as of December 15 in later years. Data on imports, shipments into the United States, and exports of honey, are published by the Department of Commerce.95/

Sugarcane Sirup.- Sugarcane sirup is produced from sugarcane grown in the Southern States. With the exception of Louisiana, cane sirup is produced mainly in small sirup mills located on farms producing the cane. In Louisiana most of the sirup is produced by large-scale, factory-type mills. About 70 percent of the production is sold and the rest is used in the home by producers. Consumption of pure sirup is largely confined to the producing area; sirup blends containing some cane sirup are more widely marketed for industrial and home use. The crop is harvested and the sirup made in late fall.

The Bureau of Agricultural Economics has a production series on sugarcane sirup that goes back to 1909. The reporting schedule was begun in 1917, and production statistics were projected backward through 1909 on the basis of data already available in the Department. The production figure is based on yield data obtained from a small sample of producers - about 5 percent. Census data in enumeration years were used as checks. No data on stocks are available.

Sorgo Sirup. - Like sugarcane sirup, sorgo sirup is produced. in late fall in small mills usually located on farms producing sorghum. It is produced in areas north of the $33^{\circ}$ latitude line. Farmers usually sell about half of their production mainly to local market outlets and neighbors. Available statistics are similar to those on sugarcane sirup.

Edible Sugarcane Molasses.- The Bureau of Agricultural Economics has a production series on edible sugarcane molasses back to 1909. This series is rather accurate for it is based on the production records of carte-sugar mills, most of which are in Louisiana.

Data on imports and exports have been available from the Department of Commerce only since 1929. Before 1929 imports were probably not large. The consumption figures of 1909 through 1928 are still probably understated, mainly because of the lack of information on imports. No data on stocks are available in the case of molasses.

Maple Sugar and Sirup. - The Bureau of Agricultural Economics production series on maple sugar and sirup goes back only to 1916. The production data are based on a sample of a small percentage of the total number of producers. Information is obtained on the number of trees tapped, and the quantities of sugar and sirup produced. Census data are used as a check. In some of the important producing States, the size of the sample is fairly large, as high as 10 percent. The data are reliable enough to show accurately the year-to-year changes.

Up to 1917 the data on imports were kept by the Department of Commerce on a fiscal-year basis. Through 1922 import data on maple sugar and maple sirup were combined. No data on stocks are available on either maple sugar or maple sirup.

Refiners' Sirup. - Production data on refiners' sirup have been available for Census of Manufactures enumeration years since 1925. From 1943 to 1946 production data were reported by refiners to the Department of Agriculture. During the war, production of refiners' sirup was greatly expanded. Starting with 1948 complete data have been collected by the Sugar Branch of the Department of Agriculture. In other years estimates of production were made by interpolation of census data.

The data on exports are somewhat overstated for they include sirups other than refiners' sirups. The consumption figures are correspondingly understated. No data on stocks are available.

## Peanuts 96/

The year's supply of peanuts includes the production of picked and threshed peanuts, beginning stocks, and imports. The data are reported in table 100 on a kernel or shelled basis. Some of the supplies available in each year are exported; some are used on farms, including seed for planting and consumption as food in farm households; farmers sell some peanuts locally; substantial quantities are crushed for oil and meal; the rest goes through commercial trade channels for food products or is held over into the next year.97/

Production figures have been published by the Crop Reporting Board 98/, beginning with 1909. They are based upon reports by farmers in all parts of the country. They cover picked and threshed peanuts only, and do not include peanuts left on farms to be hogged off. Farmers in the Gulf States plant a large acreage which they do not intend to dig for nuts but expect to use as pasture for hogs.

Information on stocks of peanuts in all commercial positions was not collected by the Department of Agriculture before September 1938. Only stocks at crushing mills and, for a few years, at cold-storage warehouses were available. Beginning in 1919, the Bureau of the Census collected stocks at crushing mills on an October l basis. Stocks at cold-storage warehouses were compiled from a report of the Federal Trade Commission.99/ Since 1938, stocks include peanuts held at shelling and

96/ Prepared by Antoine Banna and Sidney Gershben, Bureau of Agricultural Economics.

97/ See Peanuts and their Uses for Food by Banna, Antoine, Armore, Sidney J., and Foote, Richard S. U. S. Dept. Agr. Market Research Rpt. 16. 1952.

98/ U. S. Bureau of Agricultural Economics. Peanut Stocks and Processing Report. Monthly. (Processed.)

99/ U. S. Federal Trade Commission. Price and Competition among Peanut Mills, U. S. Cong. 72d, lst sess., Senate Doc. 132, 1932, 78 pp., Washington, D. C.
crushing mills, in cold-storage and other warehouses, and in peanutconsuming plants. Stocks as of September 1 may include not only the carryover of old-crop peanuts from the previous crop year into the new crop year but also new-crop peanuts harvested in the Southeast and particularly in the Southwest and delivered to the mills before September 1. The adjustment column is used to take care of such discrepancies.

Imports and exports are on a September-August year basis. They were compiled from the Monthly Summary of Foreign Commerce of the United States.100/ Before 1934, the import figures represent general imports minus re-exports. Data on imports for consumption were not published before 1934. Beginning with 1934 the figures are for imports for consumption.

Exports of shelled and unshelled peanuts were not reported separately before January 1945. A breakdown of the total exports into shelled and unshelled peanuts was estimated. This estimate was based on the assumption that shelled peanuts accounted for the same percentage of the total exports as of the total estimated domestic disappearance, as virtuaily all of these exports were to Canada, where consuming habits presumably are about the same as in the United States. Beginning with 1943, the export figures include shipments of peanuts to our Territories. Before 1943, complete figures on shipments of peanuts to the Territories were not available. Beginning in 1948, shipments are for Puerto Rico and Virgin Islands only, as shipments to Hawaii and Alaska were not reported after March 1948.

For the years before 1938, crushings of peanuts were compiled from Animal and Vegetable Fats and Oils.lol/ This report gives the crushings of hulled and in-the-hull peanuts, by quarters and calendar years. As no monthly figures on crushings were available, the sums of the quarterly figures from October through September 30 were used for the crop year. Beginning with the crop-year 1938, data on crushings have been published by the Bureau of Agricultural Economics.102/

Domestic food use of peanuts includes: (l) Peanuts consumed by farm households where grown, for which information is published separately by the Crop Reporting Board; (2) peanuts marketed through local and direct sale by farmers for edible use, which is included in the total sale of peanuts by farmers, also published by the Crop Reporting Board (arrived at by subtracting from total sales peanuts sold for seed and the estimated quantities moving into commercial channels); and (3) peanuts going into commercial food uses in peanut butter, in candy, for salting, and shelled and roasted.

100/ U. S. Bureau of the Census. Monthly Summary of Foreign Comerce of the United States. 1866 to date. Washington, D. C. 101/ See footnote 59, p. 72. 102/ See footnote 98, p. 100.

Estimates of domestic food use for years before 1920 were computed as residuals from data on production, foreign trade, crushings, seed, feed, and farm loss. For 1920-37, the estimates of domestic disappearance for food use were made directly by the Market News Division of the Fruit and Vegetable Branch, PMA, using information on movements of peanuts from mills and on quantities taken by some major users. These estimates were raised slightly to the same average level as commercial production (the total quantity cleaned, shelled, or crushed) estimated by the Bureau of Agricultural Economics, and then adjusted for imports and exports.

Beginning with 1938, the domestic food use of peanuts was computed by totaling the quantities of shelled peanuts disappearing into edible uses, domestic disappearance of cleaned peanuts, the quantity used in farm households, and the quantity distributed through local sales by farmers for edible use. Edible use of shelled peanuts is the residual obtained by subtracting crushings, exports, and ending stocks from the total of production, imports and beginning stocks. Similarly, domestic disappearance of cleaned peanuts is the residual obtained after taking into account production, stocks, and foreign trade. Estimates of military use of peanuts for edible purposes, both directly and indirectly, have been compiled from procurement data, estimates of requirements which were submitted to the Department of Agriculture during World War II and takings by post exchanges.

Coffee, Tea, and Cocoa Beans 103/
Coffee, tea, and cocoa beans are not grown commercially in this country. Some coffee is produced in the noncontiguous Territories, Hawaii and Puerto Rico, but the output is not sufficient to cover the needs of these areas and shipments to continental United States are relatively very small.

Statistics of imports of coffee, tea, and cocoa beans from foreign countries and receipts from Puerto Rico and, until 1948, from Hawaii were obtained from the annual reports of the Department of Commerce, Foreign Commerce and Navigation of the United States, through 1946 and from reports on imports and exports of the Bureau of the Census for later years.

Before World War II, data on stocks of coffee, tea, and cocoa beans held in the United States were obtained from trade reports. For green coffee the following sources for beginning stocks were used:
(1) 1910-19, Balde Directoria de Industria E. Commercia Sao Paulo; (2) 1920-36, The Brazilian Review 104/; (3) 1937-40, reports of the New York Coffee and Sugar Exchange; (4) 1948 and 1953 from Coffee Intelligence. 105/ No information is available as to the adequacy of these

103/ Prepared by Harry Sherr, Bureau of Agricultural Economics. $\overline{104} /$ The Brazilian Review, a weekly record of trade and finance. $105 /$ Published by George Gordon Paton and Company, New York, N. Y. Monthly. (Processed.)
data or the number of coffee importers and distributors covered in the estimates of year-end stocks prior to 1941.

For 1941 to early 1947 and from late 1948 to 1951, data on stocks of both green and roasted coffee held in the United States were collected by the Bureau of the Census from importers, primary and wholesale distributors, chain-store warehouses, major roasters, and others who were known as or were believed to be holders of, green coffee in this country. The coverage was good. The data on stocks excluded quantities held for or by United States military agencies. No official data on stocks were available from early 1947 to late 1948, and for this period the reports of the New York coffee and Sugar Exchange were used as the source for information on the subject.

No information has been available on stocks of vacuum-packed coffee, soluble coffee, or soluble coffee product. This gap in the data probably affected to some extent the accuracy of estimates of civilian disappearance for individual years. The output and sales of these products have increased since the end of World War II.

Information on stocks of tea maintained in the United States, beginning with 1936, were obtained from reports of The Tea Bureau, Inc.106/ No information is available for earlier years. The data collected by that agency include stocks held by qualified distributors, importers, packers, jobbers, wholesale grocers, and chain grocers (excluding retail-store inventories).

Data on stocks of cocoa beans from 1918 to 1923 were obtained from The Tea and Coffee Trade Journal.107/ For 1924-41, and beginning again in 1947, data from the New York Cocoa Exchange were used. These represent stocks of cocoa beans held by importers and primary distributors in warehouses of storage companies that are licensed by the New York Cocoa Exchange. In 1942-46 information on stocks was reported to the U. S. Department of Agriculture by a committee of representatives of the cocoa industry. The data were better than the prewar information in that the stocks of cocoa beans held by major confectionery manufacturers were also reported. One of the major problems in data on disappearance of cocoa beans is the nonavailability of data on stocks in the hands of distributors outside of licensed warehouses or of processors, either in the form of beans or products.

## Spices and Herbs 108/

This country imports most of its spices and herbs. Imports for consurmption have been reported by the Department of Commerce in considerable detail on a calendar-year basis since 1918. Data on all

106/ Tea Stocks Survey, a quarterly publication of the Tea Bureau, Inc. New York City.

107/ Tea and Coffee Trade Journal. Weekly.
108/ Prepared by Leva C. Taylor, Bureau of Agricultural Economics.
items listed under "spices" as well as fenugreek seed, poppy seed, crude saffron, and turmeric were assembled in table 101. Imports for consumption of duty-free items do not represent the quantity remaining in the country for use as some, usually small quantities, may be shipped out in unchanged form as exports of foreign merchandise, frequently called re-exports.

On June 18, 1930, many spices became duty-free. From that date imports for consumption of duty-free items were adjusted by deducting exports of foreign merchandise. However, exports of foreign merchandise are reported in much less detail than imports for consumption. For example, the category, "spices, n.e.c. (not elsewhere classified)," includes ground cloves, curry and curry powder, ground ginger root, laurel leaves, mace, marjoram, ground nutmegs, paprika, ground pepper, sage, thyme, and tonka beans, for which separate import data are available. Consequently, domestic use of individual spices is overstated by the amounts of these exports of foreign merchandise, and the "other spices" group is understated. In fact, beginning in 1947 the imports of "other spices" for consumption less re-exports turned out to be negative because of differences in categories. Although this may be somewhat confusing it does give the proper totals for imports of spices for consumption for table 102. As there is no record of shipments of spices from the Territories to continental United States, they are probably negligible.

Although limited quantities of condiment plants are grown each year in this country, data on production are available only for mustard seed beginning 1919. These data on production were adjusted for seed used in planting the crop the following year by allowing 4 pounds per acre. As no data on stocks are available, it was assumed that the crop of each year was used in the following calendar year. Some mustard is used for pharmaceutical purposes. Although pertinent data are not available, the quantities for such use are believed to be small.

There are no satisfactory data on stocks of spices.
Commodities of foreign origin whose form has changed in this country from the form in which they were imported or which have been enhanced in value by further processing here, are reported as exports of domestic merchandise. Exports of all spices combined are available for 1922-42. Beginning in 1943, ground and unground capsicum, ground and unground cinnamon, ground and unground cassia, unground cloves, unground nutmegs, unground pepper, and vanilla beans have been reported separately.

Shipments of spices to our Territories have been reported since 1929 except that reports of trade with Alaska and Hawaii were discontinued after March 1948.

Apparent domestic consumption of all spices together was derived by adding imports for consumption, adjusted for re-exports of duty-free items, and production of mustard seed for consumption, and then subtracting the exports and shipments to the Territories. (See table l02.) No satisfactory estimates of military takings could be made so total
domestic use of all spices, and of pepper and mustard separately, was divided by the total population to arrive at estimates of civilian consumption per person. (See table 26 in chapter 2.)

Similarly the apparent consumption of pepper was obtained by subtracting exports and shipments (when reported) from the imports for consumption, adjusted for re-exports of duty-free items.

The apparent domestic consumption of mustard seed for each year was estimated by adding the imports for consumption (adjusted for re-exports of duty-free items) and the production of the preceding year (adjusted for seed for planting). Exports of mustard, as seed or in processed form, are not reported separately and therefore they could not be deducted.

## CHAPTER 2. CONSUMPTION OF FOOD PER CAPITA: PRIMARY DISTRIBUTION WEIGHTS

The estimates of civilian per capita consumption of major foods in the following tables are directly comparable with those published each quarter in The National Food Situation issued by BAE. I/ They are the official estimates of the Department of Agriculture. Their derivations and limitations were discussed in detail in the preceding chapter. In general, it should be noted again that these estimates are in terms of primary distribution weights. They are annual and national averages. At present no. directly comparable data are available on regional, State, or local consumption, although some quarterly estimates for the country as a whole have been made by the Bureau of Agricultural Economics covering consumption of meats, poultry and eggs, and some dairy products. Such estimates have been made on the basis of less adequate information, however, because of seasonal changes in stocks in the distribution system and because of lack of data on changes in farm consumption. 2/

As discussed in chapter 1 , data on food consumption contained in tables 8 to 26 are derived from disappearance data - that is, they are residuals remaining after noncivilian takings and changes in stocks have been subtracted from the year's supply of individual commodities. Therefore, they are measured at various points in the distribution process. In summary: Meats are measured at the slaughter level - farm, wholesale, and even retail in terms of dressed or carcass weights, with adjustments made in cold-storage holdings. Data on poultry (and eggs) are taken at the farm level, but they have been converted to eviscerated weights and have been adjusted for changes in reported stocks. As discussed in the preceding chapter, fish has been put on an edible-portion .basis because of the variety of forms in which it is marketed.

Among the dairy products, fluid milk and cream are measured in terms of farm production for milk consumed on farms and in terms of quantities of fluid milk and cream (combined on the basis of fat content) sold by milk distributors, mainly in urban areas. Consumption of manufactured dairy products is given in terms of the processed commodities. This holds true also for most of the fats-and-oils products, with butter, margarine, lard, and shortening on an actual-weight basis. The fat content of other edible oils is used as the primary distribution weight for this heterogeneous category.

Fresh fruits, vegetables, potatoes, sweetpotatoes are given in terms of farm weights. Beans and peas are on a cleaned basis. Canned and dried fruits, canned fruit juices, frozen fruits and vegetables,

[^5]and canned vegetables are in terms of processed weight. The estimates of per capita consumption of the processed fruits and vegetables have been converted to fresh-weight equivalents at the farm level for use in analyzing changes in utilization. Most of the factors used for such computations are contained in the bulletin, Conversion Factors and Weights and Measures for Agricultural Commodities and their Products.3/ The fresh-equivalent data are given in tables 16 and 21.

The cereal products are in terms of a milled or manufactured basis - that is, consumption of flour, not consumption of wheat grain nor consumption of bread. Cane and beet sugar is on a refined basis. Data on coffee, tea and cocoa are in terms of the commodities as usually imported - green coffee beans and cocoa beans. Nuts are in terms of shelled equivalent. primary distribution weight, 1909-52 1/

| Year | Meat (carcass weight 2/) |  |  |  |  | :Fish (edible-weight equivalent): Poultry 3/ |  |  |  |  |  | $\begin{gathered} \text { Eggs } \\ 4 \end{gathered}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | : Beef | Veal | $\begin{aligned} & \text { : Lamb } \\ & \text { : and } \\ & \text { : mutton } \end{aligned}$ | : Pork | : Total | : Fresh <br> : and <br> ifrozen |  | Cured | Total |  | : Turk |  |
|  | : Lb. | $\underline{L b_{10}}$ | Ib. | $\underline{L b}$ | Lb. | Lb. | Lb. | Lb. | Lb. | Lb. | $\underline{L b .}$ | No. |
| 1909 | : 73.1 | 7.2 | 6.6 | 66.1 | 153.0 | $5 /$ | 5/ | $5 /$ | $5 /$ | 14.5 | $5 /$ | 289 |
| 1910 | : 69.5 | 7.1 | 6.4 | 61.4 | 144.4 | $5 /$ | $5 /$ | $5 /$ | $5 /$ | 15.3 | $5 /$ | 302 |
| 1911 | : 67.5 | 7.0 | 7.2 | 58.1 | 149.8 | $5 /$ | $5 /$ | $5 /$ | $5 /$ | 15.4 | 5 | 325 |
| 1912 | : 63.6 | 6.9 | 7.6 | 65.7 | 143.8 | $5 /$ | $5 /$ | $5 /$ | $5 /$ | 14.7 | $\frac{5}{5}$ | 307 |
| 1913 | : 62.5 | 6.2 | 7.1 | 65.9 | 141.7 | $5 /$ | 5 | $5 /$ | $5 /$ | 14.3 | $\frac{5}{5}$ | 299 |
| 1914 | : 61.1 | 5.7 | 7.1 | 64.2 | 138.1 | $5 /$ | $5 /$ | $5 /$ | 5 | 14.3 | $5 /$ | 291 |
| 1915 | : 55.6 | 5.8 | 6.0 | 65.5 | 133.0 | 51 | $5 /$ | $5 /$ | 5', | 14.2 | 5 | 308 |
| 1916 | : 58.1 | 6.3 | 5.7 | 68.1 | 138.2 | $5 /$ | $5 /$ | $5 /$ | $5 /$ | 13.6 | 5 | 295 |
| 1917 | : 63.7 | 7.1 | 4.4 | 58.1 | 133.3 | $5 /$ | $5 /$ | $5 /$ | 5 | 13.1 | 5 | 277 |
| 1918 | : 67.6 | 7.2 | 4.7 | 60.2 | 139.7 | $5 /$ | $5 /$ | $5 /$ | $5 /$ | 13.1 | 5 | 280 |
| 1919 | : 60.7 | 7.8 | 5.6 | 63.0 | 137.1 | $5 /$ | $5 /$ | $5 /$ | $5 /$ | 14.1 | 5 | 299 |
| 1920 | : 58.3 | 7.9 | 5.4 | 62.6 | 134.2 | $5 /$ | 5 | $5 /$ | $5 /$ | 13.5 | 5 | 295 |
| 1921 | : 54.7 | 7.5 | 6.0 | 63.9 | 132.1 | $5 /$ | $2 . ?$ | 5 | 5 | 13.2 | 5 | 295 |
| 1922 | : 58.3 | 7.7 | 5.1 | 64.8 | 135.9 | $5 /$ | 3.2 | 5 | $5 /$ | 14.0 | 5 | 312 |
| 1923 | : 58.8 | 8.1 | 5.2 | 73.2 | 145.3 | $5 /$ | 2.9 | 51 | $5 /$ | 14.4 | 5 | 322 |
| 1924 | : 58.7 | 8.4 | 5.2 | 73.0 | 145.3 | $5 /$ | 3.2 | $5 /$ | $5 /$ | 13.6 | 5 | 320 |
| 1925 | : 58.6 | 8.5 | 5.1 | 65.8 | 138.0 | $5 /$ | 3.2 | $5 /$ | $5 /$ | 14.1 | 5 | 314 |
| 1926 | : 59.4 | 8.0 | 5.4 | 63.3 | 136.1 | $5 /$ | 3.4 | $5 /$ | 5 | 24.0 | 51 | 334 |
| 1927 | : 53.7 | $7 \cdot 3$ | 5.2 | 66.8 | 133.0 | $5 /$ | 3.8 | 51 | 5 | 15.0 | 5 | 337 |
| 1928 | : 48.1 | 6.4 | 5.4 | 69.9 | 129.8 | $5 /$ | 3.8 | $5 /$ | 5 | 14.4 | 5 | 334 |
| 1929 | : 49.0 | 6.2 | 5.5 | 68.7 | 129.4 | 6.9 | 3.9 | 1.0 | 11.8 | 14.1 | 1.4 | 330 |
| 1930 | : 48.2 | 6.4 | 6.6 | 66.1 | 127.3 | 5.8 | 3.3 | 1.0 | 10.1 | 15.4 | 1.5 | 327 |
| 1931 | $: 47.9$ | 6.6 | 7.0 | 67.4 | 129.9 | 4.9 | 3.2 | . 8 | 8.9 | 13.9 | 1.4 | 328 |
| 1932 | : 46.0 | 6.5 | 7.0 | 69.7 | 129.2 | 4.3 | 3.3 | - 7 | 8.3 | 14.2 | 1.7 | 309 |
| 1933 | : 50.8 | 7.0 | 6.7 | 69.8 | 134.3 | 4.2 | 3.8 | . 6 | 8.6 | 14.5 | 1.9 | 293 |
| 1934 | : 63.0 | 9.2 | 6.2 | 63.6 | 142.0 | 4.3 | 4.2 | . 7 | 9.2 | 13.3 | 1.8 | 285 |
| 1935 | : 52.5 | 8.4 | 7.2 | 47.7 | 115.8 | 5.1 | 4.7 | - $?$ | 10.5 | 12.9 | 1.7 | 276 |
| 1936 | : 59.7 | 8.3 | 6.5 | 54.4 | 128.9 | 5.2 | 5.8 | . 7 | 11.7 | 13.5 | 2.2 | 285 |
| 1937 | : 54.4 | 8.5 | 6.6 | 55.0 | 124.5 | 5.6 | 4.2 | . 8 | 10.6 | 13.4 | 2.2 | 304 |
| 1938 | : 53.6 | 7.6 | 6.8 | 57.4 | 125.4 | 5.3 | 4.8 | . 8 | 10.9 | 12.5 | 2.2 | 306 |
| 1939 | : 53.9 | 7.5 | 6.5 | 63.9 | 131.8 | 5.4 | 4.6 | - 7 | 10.7 | 13.9 | 2.4 | 309 |
| 1940 | : 54.2 | 7.3 | 6.5 | 72.4 | 14.0 .4 | 5.7 | 4.1 | . 7 | 10.5 | 13.9 | 2.9 | 314 |
| 1941 | : 60.0 | 7.5 | 6.7 | 67.4 | 141.6 | 6.3 | 4.2 | . 6 | 11.1 | 15.2 | 2.9 | 307 |
| 1942 | : 60.4 | 8.1 | 7.1 | 62.8 | 138.4 | 5.3 | 2.8 | . 6 | 8.7 | 17.4 | 3.0 | 314 |
| 1943 | : 52.5 | 8.1 | 6.4 | 77.9 | 144.9 | 5.5 | 1.8 | . 6 | 7.9 | 22.7 | 2.7 | 342 |
| '1944 | : 54.9 | 12.2 | 6.6 | 78.5 | 152.2 | 5.6 | 2.5 | . 6 | 8.7 | 20.1 | 2.7 | 350 |
| 1945 | : 58.6 | 11.7 | 7.2 | 65.7 | 143.2 | '5.6 | 2.5 | . 7 | 9.8 | 21.3 | 3.4 | 397 |
| 1946 | : 60.8 | 9.8 | $t .6$ | 74.9 | 152.1 | 5.9 | 3.8 | . 7 | 10.4 | 19.1. | 3.7 | 374 |
| 1947 | : 68.6 | 10.7 | 5.2 | 68.6 | 153.1 | 5.8 | 3.6 | , 6 | 10.0 | 17.9 | 3.5 | 378 |
| 1948 | : 62.2 | 9.4 | 5.0 | 66.8 | 143.4 | 6.0 | 3.8 | . 6 | 10.4 | 18.1 | 3.0 | 384 |
| 1949 | : 63.0 | 8.8 | 4.0 | 66.8 | 142.6 | 5.8 | 4.1 | . 6 | 10.5 | 19.4 | 3.2 | 378 |
| 1950 | : 62.5 | 7.9 | 3.9 | 68.1 | 1.42 .4 | 6.6 | 4.3 | . 6 | 11.5 | 20.3 | 4.0 | 383 |
| 1951 | : 55.2 | 6.6 | 3.4 | 70.6 | 135.8 | 6.6 | 4.0 | . 6 | 11.2 | 22.2 | 4.3 | 395 |
| 19526 | 61.3 | 7.1 | 4.1 | 71.6 | 144.1 | 6.3 | 4.1 | . 6 | 11.0 | 23.0 | + 4 | 407 |

1/Civilian consumption only, beginning 1941. 2/ Approximately at wholesale level fistribution. 3/ Equivalent eviscerated weight basis. Although most of the poultry was sold in dressed form until recent years, more is now sold ready-to-cook. The entire series was put on the latter basis to achieve comparability. 4/ Measured approximately at wholesale level of distribution. Average weight of eggs 1909-46 is 1.5 pounds per dozen; 1947, 1.51 ; 1948, 1.52 ; 1949, 1.53; 1950, 1.54; 1951, 1.55; and 1952, 1.56. This change in factor allows for the increasing size of eggs marketed. 5/ Not available. (See table 29 for approximations of fish consumption, table 30 for turkey.) 6/ Preliminary.

Table 9.- Dairy products: Per capita consumption, primary distribution weight, 1909-52 I/


1/Civilian consumption only, beginning 1941. 2/ Whole milk equivalent on a fat-solids basis. 3 Includes cream in terms of whole milk equivalent. Farm weight for farm consumption, distribution weight for nonfarm. $4 /$ Whole and part whole milk cheese; excludes full skim, cottage, pot, and bakersi. 5/ Case and bulk goods, unskimmed only. 6/Not available. 7/ Less than 0.05 pound. \&/ Preliminary.

Table 10.- Fats and oils: Per capita consumption, 1909-52 $1 /$


1/Civilian consumption only, 1941 to date. $2 /$ Computed from unrounded numbers. 3/ Includes "other edible fats and oils" on fat-content basis. $4 /$ Includes fats and oils used in cooking and salad oils, salad dressing and mayonnaise, in bakery products, and in minor uses such as fish canning. 5/ See table 32 for approximations. 6/ Preliminary.





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Table 12.- Canned fruits: Per capita consumption, 1909-52 1/


1/ The pack year, on which data are based 1909-42, begins in early June of year indicated. Civilian consumption only, beginning 1941.

2/ Estimated.
3/ Less than 0.05 pounds.
Preliminary.

Table 13.- Canned fruit Juices (excluding frozen): Per capita consumption, 1910-52 1/


1/ Civilian consumption beginning 1941. Calendar-year basis except for citrus fuices which are on a packyear basis beginning in November of year prior to that indicated and grape juice which in the years 1909-33 and 1948 to date begins November prior to year indicated.
2/ Converted to single-strength equivalents on basis of 5.54 pounds single strength to 1 pound concentrate for grapefruit and orenge juice and 5.16 to 1 for lemon.
$3 /$ Not available; assumed to be negligible.
4/ Preliminary.
Table 14.- Frozen fruits and juices: Per capita consumption, 1925-52 1/

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| Year | : | Blackberries | Raspberries | Strewberries | Other berries | Apples | Apricots | Cherries | Grapes and pulp | Peaches | $\begin{gathered} \text { Citrus } \\ \hline \text { Product } \\ \text { weight } \\ 2 / \\ \hline \end{gathered}$ | $\begin{aligned} & \text { uices } \\ & \text { Single } \\ & \text { strengtr } \\ & \text { basis } 3 \end{aligned}$ | Miscel- <br> laneous $\qquad$ | Total product weight) |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | : | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds |
| 1925 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | 0.20 |
| 1926 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 13 |
| 1927 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 27 |
| 1928 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 50 |
| 1929 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 57 |
| 1930 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 52 |
| 1931 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 41 |
| 1932 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 62 |
| 1933 | : | --- | --- | --- | --- | --- | --- | --- | -- | --- | --- | --- | --- | . 50 |
| 1934 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 18 |
| 1935 |  | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 50 |
| 1936 | : | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | --- | . 66 |
| 1937 | : | 0.02 | 0.04 | 0.21 | 0.05 | 0.01 | --- | 0.16 | 0.01 | --- | --- | --- | 0.01 | . 51 |
| 1938 | : | . 11 | . 18 | . 28 | . 07 | . 04 | 0.01 | . 19 | . 05 | 0.01 | --- | --- | . 07 | 1.01 |
| 1939 | : | . 03 | . 09 | . 38 | . 16 | . 01 | 5/ | . 29 | . 05 | . 02 | -.. | --- | . 08 | 1.11 |
| 1940 | : | . 06 | . 09 | . 44 | . 18 | . 01 | $5 /$ | . 32 | . 07 | . 06 | --- | --- | . 03 | 1.26 |
| 1941 | : | . 07 | . 14 | . 51 | . 14 | . 03 | $5 /$ | . 24 | . 08 | . 04 | --- | --- | . 06 | 1.31 |
| 1942 | : | . 04 | . 13 | . 58 | . 08 | . 07 | . 01 | . 28 | . 08 | . 05 | --- | --- | . 05 | 1.37 |
| 1943 | : | . 03 | . 14 | . 32 | . 03 | . 11 | . 04 | . 27 | . 04 | . 09 | --- | --- | . 04 | 1.11 |
| 1944 | : | . 09 | . 17 | . 32 | . 19 | . 30 | .16 | . 32 | 5/ | . 18 | --- | --- | . 26 | 1.99 |
| 1945 | : | . 05 | . 08 | . 24 | . 16 | . 48 | . 40 | . 26 | . 04 | . 37 | --- | --- | . 20 | 2.28 |
| 1946 | : | . 14 | . 15 | . 38 | . 24 | . 59 | . 30 | . 34 | . 11 | . 56 | 0.07 | 0.12 | . 23 | 3.11 |
| 1947 | : | . 10 | . 21 | . 73 | . 22 | . 34 | . 14 | . 55 | . 09 | - 31 | . 06 | . 09 | . 42 | 3.17 |
| 1948 | : | . 13 | . 19 | . 77 | . 24 | . 32 | . 10 | . 61 | . 10 | . 28 | . 09 | . 21 | . 13 | 2.96 |
| 1949 | : | . 08 | . 15 | . 96 | . 20 | . 28 | . 06 | . 50 | . 06 | . 16 | . 91 | 3.06 | . 10 | 3.46 |
| 1950 | : | . 09 | . 22 | . 86 | . 28 | . 28 | . 06 | . 60 | . 05 | . 16 | 1.50 | 5.08 | . 12 | 4.22 |
| 1951 | : | . 06 | . 21 | . 98 | . 17 | . 21 | . 03 | . 59 | . 03 | . 16 | 2.16 | 7.15 | . 09 | 4.69 |
| 1952 6/ | : | . 07 | . 21 | 1.19 | . 29 | . 27 | . 04 | . 62 | . 04 | . 20 | 3.48 | 11.29 | . 12 | 6.53 |
|  | : |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : |  |  |  |  |  |  |  |  |  |  |  |  |  |

[^6]Table 150- Dried fruits: Per capita consumption, pack years, 1909-52 1/

| Pack year | : | Apples | Apricots: | Dates | Figs | Peaches | Pears | Prunes | $\begin{aligned} & \text { : Raisins : } \\ & \text { : and } \\ & \text { : } \begin{array}{l} \text { currants } \end{array} \end{aligned}$ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | : | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds | Pounds |
| 1909 | : | 0.2 | 0.2 | 0.2 | 0.3 | 0.6 | 2/ | 1.0 | 1.7 | 4.2 |
| 1910 | : | . 2 | . 1 | . 3 | . 3 | . 5 | 2/ | . 6 | 1.4 | 3.4 |
| 1911 | : | . 3 | . 1 | . 2 | . 3 | . 3 | 0.1 | 1.5 | 1.4 | 4.2 |
| 1912 | : | . 4 | . 1 | . 3 | . 3 | . 6 | 2 | 1.0 | 1.8 | 4.5 |
| 1913 | : | . 2 | . 1 | . 3 | . 3 | . 7 | $2 /$ | . 6 | 1.4 | 3.6 |
| 1914 | : | . 1 | . 2 | . 2 | . 3 | . 6 | . 1 | . 8 | 1.7 | 4.0 |
| 1915 | : | . 4 | . 2 | . 3 | . 2 | . 6 | $2 /$ | 1.5 | 1.8 | 5.0 |
| 1916 | : | . 5 | . 1 | . 2 | . 3 | . 5 | $2 /$ | 1.4 | 2.0 | 5.0 |
| 1917 | : | . 4 | . 3 | . 1 | . 3 | . 7 | $2 /$ | 2.0 | 2.4 | 6.2 |
| 1918 | : | . 4 | . 1 | . 2 | . 3 | . 4 | $2 /$ | . 9 | 2.1 | 4.4 |
| 1919 | : | . 4 | . 1 | . 3 | . 5 | . 6 | . 1 | 2.0 | 2.8 | 6.8 |
| 1920 | : | . 2 | . 1 | . 3 | . 4 | . 5 | . 1 | 1.7 | 3.3 | 6.6 |
| 1921 | : | . 1 | . 1 | . 4 | . 6 | . 4 | $2 /$ | 1.1 | 2.7 | 5.4 |
| 1922 | : | . 3 | . 2 | . 4 | . 5 | . 5 | . 1 | 1.9 | 2.6 | 6.5 |
| 1923 | : | . 1 | . 2 | . 3 | . 4 | . 4 | $2 /$ | 1.4 | 2.6 | 5.4 |
| 1924 | : | . 2 | . 2 | . 5 | . 5 | . 4 | . 1 | 1.5 | 2.9 | 6.3 |
| 1925 | : | . 1 | . 1 | . 6 | . 5 | . 3 | . 1 | 1.8 | 2.8 | 6.3 |
| 1926 | : | . 1 | . 2 | . 4 | . 5 | . 4 | . 1 | 1.6 | 2.7 | 6.0 |
| 1927 | : | . 1 | . 2 | . 4 | . 4 | . 2 | . 1 | 2.2 | 2.6 | 6.2 |
| 1928 | : | . 1 | . 2 | . 4 | . 4 | . 4 | . 1 | 1.7 | 2.8 | 6.1 |
| 1929 | : | . 2 | . 2 | . 4 | . 4 | . 2 | . 1 | 1.3 | 2.4 | 5.2 |
| 1930 | : | .l | . 2 | . 4 | . 3 | . 4 | 0 | 1.8 | 2.1 | 5.3 |
| 1931 | : | . 1 | . 3 | . 4 | . 2 | . 2 | $2 /$ | 1.6 | 1.8 | 4.6 |
| 1932 | : | . 1 | . 3 | . 4 | . 3 | . 3 | $2 /$ | 1.7 | 2.3 | 5.4 |
| 1933 | : | . 1 | . 3 | . 4 | . 3 | . 3 | $2 /$ | 1.4 | 2.3 | 5.1 |
| 1934 | : | . 1 | . 2 | . 5 | . 3 | . 3 | 2/ | 1.5 | 2.1 | 5.0 |
| 1935 | : | . 1 | . 2 | . 5 | . 3 | . 3 | $2 /$ | 2.1 | 2.3 | 5.8 |
| 1936 | : | . 2 | . 3 | . 5 | . 3 | . 4 | 2 | 1.8 | 1.9 | 5.4 |
| 1937 | : | . 2 | . 3 | . 4 | . 4 | . 3 | 0 | 2.1 | 2.0 | 5.7 |
| 1938 | : | . 1 | . 1 | . 4 | . 4 | . 3 | $2 /$ | 1.6 | 2.6 | 5.5 |
| 1939 | : | . 2 | . 4 | . 4 | . 3 | . 3 | . 1 | 2.1 | 2.5 | 6.3 |
| 1940 | : | . 1 | . 1 | . 4 | . 4 | - 4 | 2/ | 2.0 | 2.5 | 5.9 |
| 1941 | : | 2) | . 2 | . 2 | . 4 | . 1 | 0 | 1.6 | 1.8 | 4.3 |
| 1942 | : | 0 | 0 | . 2 | . 4 | 0 | 0 | 1.4 | 2.2 | 4.2 |
| 1943 | : | . 1 | 2/ | . 2 | . 4 | . 1 | 2/ | 2.2 | 3.0 | 6.0 |
| 1944 | : | . 1 | . 1 | . 4 | . 4 | . 2 | 2/ | 1.8 | 3.0 | 6.0 |
| 1945 | : | . 2 | . 1 | . 4 | . 4 | . 3 | . 1 | 2.2 | 2.4 | 6.1 |
| 1946 | : | . 2 | . 2 | - 5 | . 3 | . 1 | $2 /$ | 1.6 | 1.8 | 4.7 |
| 1947 | : | . 2 | . 1 | . 3 | . 3 | . 2 | $2 /$ | 1.1 | 1.7 | 3.9 |
| 1948 | : | . 1 | . 2 | . 4 | . 3 | . 1 | 2/ | 1.1 | 1.9 | 4.1 |
| 1949 | : | . 2 | . 2 | . 4 | . 3 | . 2 | 2/ | 1.5 | 1.8 | 4.6 |
| 1950 | : | . 1 | . 2 | . 5 | . 3 | . 1 | 2/ | 1.4 | 1.7 | 4.3 |
| 1951 | : | . 1 | . 1 | . 5 | . 3 | . 1 | $2 /$ | 1.4 | 1.8 | 4.3 |
| 1952 3/ |  | . 1 | . 1 | . 5 | . 3 | . 1 | 2/ | 1.5 | 1.7 | 4.3 |

1/ Production begins mid-year. Civilian consumption 1941 to date.
2/ Less than 0.05 pounds.
Preliminary.
Table 16. - Fruits, farm-weight equivalent: Per capita consumption, 1910-52 1/

 l/ Excludes quantities consumed as baby food Farm-weight equivalent derived 4/Beginning 2934 includes only the apples grown in commercial areas. 5/Less than 0.05 pounds. 6/ Preliminery.
Table 1:.- Fresh vegetables, commercial: Per capita consumption, farm weight, 1919-52 1/
 3/ Included in minor vegetables. 4/ Less than 0.05 pound.
5/ Preliminary.
Table 1.8.- Canned vegetables: Per capita consumption 1909-52 1/

|  | Leafy, green, and yellow vegetables $2 /$ |  |  |  |  |  |  | Tomato products $2 /$ |  |  |  |  | Other vecetables 21 |  |  |  |  | Other 4/ | Total |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | :Asparagus | Lima <br> beans | Snap beans | Carrots: | Peas | :Prupkin : and $\vdots$ aquash $:$ | Spinach: | $\begin{gathered} \text { Whole } \vdots \\ \text { tomatoes: } \end{gathered}$ | Catsup and chill sauce | Paste and sauce |  | :vegetable: <br> : Tomato $:$ :and other: :vegetable: | Beets | : Corn | Pickles | $\begin{aligned} & \text { s 2/ } \\ & \vdots \\ & \vdots \\ & \vdots \end{aligned}$ | Sveet, potatoes: |  |  |
|  | Lb. | $\underline{\text { Lb }}$ | Lb. | Lb. | Lb. | Lb. | Lb. | $\underline{\mathrm{Lb}}$. | $\underline{\text { Lb. }}$ | $\underline{\text { Lb. }}$ | Lb. | Lb. | Lb. | Lb. | Lb. | : | $\underline{\text { I.b. }}$ | $\underline{\text { Lb. }}$ | $\underbrace{\text { İ- }}_{\text {I }}$ |
| 1909 | : --- | --- | --- | --- | 1.7 | --- | --- | 6.0 | --- | --- | --- | --- | --- | 2.1 | --- | --- | --- | 5.3 | 15.1 |
| 1910 | : --- |  |  |  | 1.5 | --- | --- | 5.3 | --- | --- | --- | --- | --- | 2.4 | --- |  |  | 5.1 | 14.3 |
| 1911 | : --- | --- | --- | --- | 1.4 |  |  | 4.8 |  |  |  |  |  | 3.7 | --- | --- | --- | 5.5 | 15.4 |
| 1912 | : --- | --- | --- | --- | 1.8 | --- | --- | 5.8 | --- | --- | --- |  |  | 4.3 | --- |  | --- | 6.5 | 18.4 |
| 1913 | : ---- |  | --- | --- | 2.4 | --- | --- | 7.0 | --- | --- | --- | --- | --- | 3.2 | --- |  |  | 6.9 | 12.5 |
| 1914 | --- | --- | --- | ---- | 2.6 |  |  | 7.1 |  | --- |  |  | --- | 2.5 | --- |  | --- | 6.8 | 19.0 |
| 1915 | --- | --- | --- | --- | 2.7 | --- | --- | 5.9 | --- | --- | --- | --- | --- | 2.9 | --- |  | --- | 6.3 | 17.8 |
| 1917 | --- | --- | -- | --- | 2.3 2.4 | --- | -..- | 4.9 | --- | --- | --- | --- | ---- | 2.8 | --- | --- | --- | 6.0 | 16.0 |
| 1918 | : --- | --- | --- | --- | 3.0 | --- | --- | 7.1 | --- | -..- | -- | -- | -- | 3.2 | --- |  |  | 8.7 | 18.7 22.0 |
| 1919 | --- | --- | 0.9 | --- | 2.8 | --- | --- | 6.3 | --- | --- | --- | ...- | --- | 3.5 | 1.6 | 1.4 | ---- | 4.5 | 21.0 |
| 1920 | 0.4 | --- | . 8 | --- | 2.9 | 0.2 | 0.4 | 5.0 | --- | --- | --- | --- | 0.3 | 3.9 | 1.2 | 1.8 | --- | ?. ${ }^{\text {a }}$ | 18.2 |
| 1921 | . 3 | --- | . 5 | --- | 2.8 | . 2 | . 3 | 4.4 | --- | --- | --- | --- | . 2 | 3.7 | 1.1 | :9 | . 3 | 2.0 | 16.7 |
| 1922 | . 3 | 0.1 | . 6 | --- | 2.8 | . 2 | . 6 | 4.4 | --- | --- | --- | --- | . 2 | 3.1 | 1.8 | 1.2 | . 3 | 1.3 | 16.9 |
| 1923 | : $\quad .4$ | . 1 | . 7 | --- | 3.5 | . 3 | . 7 | 5.8 | --- | --- | --- | --- | . 2 | 3.3 | 1.2 | 2.2 | . 3 | 2.5 | 21.2 |
| 1924 | : 4 | . 1 | . 9 | --- | 4.3 | . 3 | . 5 | 6.0 | --- | 0.2 | 0.6 | --- | . 3 | 3.4 | 1.3 | 2.1 | . 3 | 2.0 | 22.7 |
| 1925 | . 4 | . 2 | 1.2 | --- | 4.5 | . 4 | . 6 | 6.9 | --- | . 4 | . 7 | --- | . 5 | 3.7 | 1.5 | 1.5 | . 3 | 2.5 | 25.3 |
| 1926 | : 4 | . 2 | 1.3 | --- | 4.2 | . 4 | . 5 | 6.7 | 2.1 | . 4 | . 7 | --- | . 4 | 4.4 | 2.5 | 1.3 | . 2 |  | 25.7 |
| 1927 | : . 4 | . 1 | 1.0 | --- | 4.1 | . 4 | . 7 | 5.3 | 1.8 | . 3 | . 6 | --- | . 3 | 3.9 | 1.4 | 1.6 | . 2 | -- | 22.1 |
| 1928 | : 5 | . 1 | 1.2 | --- | 4.1 | . 4 | . 9 | 5.4 | 1.6 | . 3 | . 6 | --- | . 3 | 3.7 | 1.2 | 2.0 | . 2 | . 1 | 22.6 |
| 1929 | : 5 | . 2 | 1.7 | --- | 4.4 | . 7 | 1.3 | 5.8 | 1.8 | . 3 | . 6 | --- | . 4 | 3.8 | 1.7 | 2.0 | . 2 | . 1 | 25.5 |
| 1930 | : 4 | . 2 | 1.9 | --- | 4.5 | . 7 | . 8 | 6.5 | 1.8 | . 4 | 1.0 | 0.2 | . 6 | 4.1 | 1.7 | 2.3 | . 1 | . 8 | 28.0 |
| 1931 | : 4 | . 3 | 1.7 | --- | 4.0 | . 5 | . 6 | 5.7 | 1.7 | . 2 | . 8 | . 6 | . 5 | 3.7 | 1.8 | 2.4 | . 1 | -- | 25.0 |
| 1932 | : 4 | . 2 | 1.3 | 0.1 | 3.2 | . 4 | . 5 | 5.1 | 1.6 | . 2 | . 5 | 1.1 | . 3 | 3.3 | 1.6 | 1.7 | . 1 | . 1 | 21.7 |
| 1933 | : . 5 | . 2 | 1.1 | . 1 | 3.2 | . 5 | . 6 | 5.4 | 1.5 | . 4 | . 6 | 1.1 | . 3 | 3.1 | 1.5 | 1.7 | . 1 | . 1 | 22.0 |
| 1934 | : . 5 | . 2 | 1.3 | . 2 | 3.5 | . 5 | . 7 | 5.4 | 1.5 | . 4 | . 7 | 1.1 | . 4 | 2.9 | 1.6 | 1.5 | . 1 | . 5 | 23.0 |
| 1935 | : 4 | - 3 | 1.4 | . 2 | 3.9 | . 4 | . 8 | 5.6 | 1.6 | . 5 | . 8 | 1.6 | . 5 | 3.5 | 1.7 | 2.3 | . 1 | . 2 | 25.8 |
| 1936 | : . 5 | . 3 | 1.5 | . 2 | 4.3 | . 3 | . 9 | 5.7 | 1.6 | . 4 | . 8 | 2.4 | . 5 | 4.0 | 2.0 | 1.4 | . 1 | . 4 | 27.3 |
| 1937 | : .5 | . 3 | 1.7 | . 2 | 4.6 | . 4 | . 9 | 5.6 | 1.6 | . 5 | . 8 | 3.0 | . 6 | 3.8 | 2.0 | 1.4 | . 1 | 1.0 | 20.0 |
| 1938 | : 5 | - 3 | 2.0 | . 2 | 4.8 | . 4 | . 9 | 5.8 | 1.8 | . 7 | . 7 | 2.8 | . 0 | 4.0 | 2.3 | 1.8 | . 1 | . 9 | 30.6 |
| 1939 | . 6 | . 4 | 2.1 | . 2 | 4.9 | . 5 | . 9 | 5.7 | 2.1 | . 7 | . 6 | 2.6 | . 7 | 4.2 | $2 . ?$ | 2.0 | . 1 | . 9 | 31.4 |
| 1940 | . 6 | . 5 | 2.3 | - 3 | 5.4 | . 7 | 1.1 | 5.8 | 2.5 | . 8 | . 7 | 2.9 | . 8 | 4.4 | 2.1 | 2.0 | . 2 | . 8 | 33.9 |
| 1941 | . 6 | . 6 | 2.3 | . 3 | 6.1 | . 7 | . 9 | 5.9 | 2.5 | . 9 | . 6 | 3.6 | . 9 | 4.7 | 2.5 | 2.2 | . 3 | . 7 | 36.3 |
| 1942 | . 7 | . 6 | 2.6 | . 3 | 6.3 | . 5 | 1.2 | 6.1 | 2.4 | 1.1 | . 7 | 4.4 | 1.2 | 5.5 | 2.8 | 2.1 | . 2 | . 5 | 39.2 |
| 1944 | . 6 | . 2 | 2.6 2.9 | . 3 | 5.8 5.2 | . 5 | 1.8 | 5.5 | 1.7 | 1.5 | 1.2 | 4.1 | 1.1 | 5.3 | 2.5 | 1.8 | . 3 | . 5 | 36.5 |
| 1945 : | . 4 | . 3 | 3.3 | . 4 | 7.1 | . 4 | 1.0 | 4.1 | 2.4 2.4 | 1.9 2.7 | 1.4 2.1 | 2.9 6.9 | 1.4 | 5.0 | 2.2 2.3 | 1.6 | . 3 | .8 1.0 | 33.9 42.0 |
| 1946 : | 1.0 | . 3 | 3.2 | . 6 | 7.5 | . 6 | 1.6 | 4.0 | 2.8 | 3.0 | 2.1 | 5.1 | 1.4 | 6.2 | 2.9 | 2.3 | . 6 | 1.9 | 42.0 46.1 |
| 947 : | . 6 | . 3 | 2.7 | . 4 | 5.8 | . 6 | 1.1 | 3.8 | 2.7 | 2.7 | 1.5 | 3.8 | 1.2 | 5.8 | 3.2 | 2.4 | . 5 | . 8 | 39.9 |
| 948 : | . 7 | . 4 | 2.8 | . 4 | 5.7 | . 5 | 1.0 | 4.4 | 2.2 | 2.3 | . 5 | 4.2 | 1.2 | 4.9 | 3.3 | 1.1 | . 3 | 1.4 | 37.3 |
| 949 : | . 6 | . 4 | 2.9 | . 3 | 5.3 | . 5 | 1.1 | 4.6 | 2.5 | 2.2 | . 6 | 4.4 | 1.0 | 4.8 | 3.3 | 1.9 | . 5 | 1.3 | 38.2 |
| 950 : | . 7 | . 6 | 3.4 | . 4 | 5.4 | . 6 | . 9 | 5.0 | 2.7 | 2.4 | . 7 | 4.9 | 1.6 | 5.1 | 3.3 | 1.8 | . 7 | 1.3 | 41.5 |
| 951 : | . 7 | . 5 | 3.2 | . 3 | 5.3 | . 6 | 1.2 | 4.8 | 2.5 | 3.3 | . 8 | 4.6 | 1.5 | 4.8 | 3.1 | 2.3 | . 4 | 1.3 | 41.2 |
| 952 5/: | . 7 | . 5 | 3.4 | . 4 | 5.1 | . 7 | 1.0 | 4.1 | 2.7 | 2.7 | . 9 | 5.1 | 1.4 | 4.8 | 3.8 | 1.9 | . 8 | 1.3 | 41.3 |

Table 19.-Canned soups and baby foods: Per capita consumption 1909-52 1/

| Year | Canned soups 2/ | :$:$$:$$:$$:$$:$: | Year | Canned soups 2/ | Baby foods 3/ |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | : | : |  |
|  |  |  |  |  | Fruit | Vegetable | : Other | Total |
|  |  |  |  |  |  | Vegetable | : 4/ | Rotal |
|  |  |  |  |  |  | : | . |  |
|  | Founds | : | : | Pounds | Pounds | Pounds | Pounds | Founds |
| 1909 | 0.3 | : | 1934 : | 3.2 | 0.01 | 0.04 | 0.04 | 0.09 |
| 1910 | . 5 | : | 1935 | 3.6 | . 01 | . 04 | . 04 | . 09 |
| 1911 | . 7 | : | 1936 | 4.2 | . 02 | . 09 | . 05 | . 16 |
| 1912 | . 9 | : | 1937 | 5.0 | . 05 | . 17 | . 06 | . 28 |
| 1913 | 1.2 | : | 1938 : | 5.4 | . 06 | . 18 | . 03 | . 27 |
| 1914 | 1.6 | : | 1939 | 6.3 | . 08 | . 21 | . 09 | . 38 |
| 1915 | 1.6 | : | : |  |  |  |  |  |
| 1916 | 1.6 | : | 1940 | 6.7 | . 11 | . 28 | . 12 | . 51 |
| 1917 | 1.7 |  | 1941 | 6.9 | . 14 | . 32 | . 26 | . 72 |
| 1918 | 1.7 | : | 1942 | 7.3 | . 38 | . 48 | . 29 | 1.15 |
| 1919 | 1.8 |  | 1943 : | 5.3 | . 44 | . 72 | . 44 | 1.60 |
| 1920 | 1.9 | : | 1944 : | 6.6 | . 55 | . 81 | . 71 | 2.07 |
| 1921 | 2.0 | : | 1945 | 7.4 | . 86 | . 91 | . 93 | 2.70 |
| 1922 | 3.1 | : | 1946 | 8.7 | . 95 | . 80 | 1.01 | 2.76 |
| 1923 | 4.0 |  | 1947 : | (8.7) | . 99 | . 77 | . 99 | 2.75 |
| 1924 | 3.2 | : | 1948 : | (9.6) | 1.23 | . 90 | 1.36 | 3.49 |
| 1925 | 2.5 | : | 1949 | (9.6) | 1.21 | . 82 | 1.29 | 3.32 |
| 1926 | 2.7 | : | : |  |  |  |  |  |
| 1927 | 3.0 | : | 1950 : | (10.2) | 1.26 | . 79 | 1.32 | 3.37 |
| 1928 | 3.4 | : | 1951 : | (10.5) | 1.26 | . 77 | 1.35 | 3.38 |
| 1929 | 3.9 | : | 1952 5/: | (11.2) | 1.36 | . 82 | 1.45 | 3.63 |
| 1930 | 3.1 | : | 10, |  |  |  |  |  |
| 1931 | 2.3 | : | : |  |  |  |  |  |
| 1932 | 2.2 | : | : |  |  |  |  |  |
| 1933 | 2.0 | : | : |  |  |  |  |  |
|  |  | : | : |  |  |  |  |  |

1/ Civilian consumption beginning 1941.
2/ In current years tomato soup constitutes about 20 percent of the total. In years 1909-34 based on production data from Census of Manufactures, with interpolations for years not reported; beginning 1947 rough approximations only.

3/ For consumption per child under 3 years, see table 81.
4/ In current years meat constitutes approximately 80 percent of this item, custards and puddings 20 percent.

5/ Preliminary.



Table 21.- Vegetables and canned potatoes and sweetpotatoes, estimated farm-weight equivalent: Per capita consumption 1909-52 l/


1/Excludes quantities from home-garden production (table 36). Civilian consumption only, beginning 1941.
2/ See table 17 for items covered.
3/ Excludes quantities used for soups and baby food; see table 18 for items covered.
4) See table 20 for items covered.

5/ Computed from data in table 18. To derive total potatoes consumed, add quantities shown in table 22.
6/ Preliminary.

Table 22.- Potatoes, sweetpotatoes, dry edible beans, and dry fielci peas: Per capita consumption, primary distribution weight, 1909-52 1


1/ Civilian consumption only, beginning 1941.
2/ Farm weight basis, calendar years. Includes farm garden produce but not nonfarm.
3/ Cleaned basis, calendar yeare.
4 Cleaned basis, crop years beginning approximately September of year indicated.
5. Basic data inadequate. Por approximations, see table 35 .

Preliminary.

Table 23.- Flour and other cereal products: Per capita consumption, 1909-52 1/


1/ Consumption figures for most items are measured at the processing level. Excludes quantities used in alcoholic beverages. Civilian consumption only, beginning 1941. Data in parentheses are approximations.
2/ Semolina and durum flour in products such as macaroni, spaghetti, and noodles.
3 Estimated on basis of data in Census of Manufactures plus an allowance for grind for farm home use.
4/ Milled basis. Rice consumption for year beginning August previous to year stated. Includes some table rice used by brewers prior to August 1934.
5/ See table 24 for data on corn sugar and corn sirup.
6/ Based on census data. In recent years approximately 50 percent of cornmeal was degermed.
7/ Principally oatmeal but includes an allowance for ready-to-eat oat cereals and infant foods in recent years.

8/ Barley food products expressed in terms of malt equivalent. Includes malt, pearl barley, and barley meal (in 1909-19).

9/ Preliminary.

Table 24.- Sugars, sirups, and beverages: Per capita consumption, primary distribution weight, 1909-52 1


1/ Consumption of sugars and sirups other than cane and beet sugar is derived from production and foreign trade data; minor military takings, beginning 1941, have not been subtracted from total supply, so per capita estimates are for the total population; all other items, civilian consumption only beginning 194l. Data in parentheses are approximations. 2/ Refined, measured at approximately wholesale level of distribution. 3/ Includes sirup equivalent of maple sugar. 4/ Green bean equivalent. 5/ Includes cocoa bean equivalent of cocoa products imported 1942 to date. 6/ Not available. I/ Less than 0.05 pounds. 8/ Preliminary.

Table 25.- Tree nuts, coconuts, and peanuts (shelled basis): Per capita consumption, crop years, 1909-52 1/


1/ Crop year beginning July of year indicated for tree nuts; peanuts on September-August year. Civilian per capita consumption beginning 1941.

2/ Includes the following nuts: Brazil, pignolia, pistache, chestnuts, cashews, and miscellaneous tree nuts.

```
    3/ Based on imports beginning July 1 of year indicated.
    4/ Less than 0.005 pounds.
    Preliminary.
```

Table 26. - Spices: Apparent per capita consumption, 1918-52


1/ Based upon imports for consumption, adjusted for exports of foreign unground pepper from mid-1930, minus domestic exports and shipments to the Territories of unground pepper, when reported.

2/ Based upon imports for consumption plus the production of the preceding year, adjusted for seed for planting.

3/ Eased upon imports for consumption of all items, except pepper and mustard, shown in table 101.

4/ Less than 0.05 pounde.
5/ Proliminary

Estimates of per capita consumption of individual foods which are regularly developed and published by the Department of Agriculture are made at various levels of distribution, as discussed in the two preceding chapters. These have proved satisfactory for study of changes through time in consumption of major foods. But they are not fully satisfactory for such purposes as construction of an index of overall food consumption, nutritive analysis, and comparisons with consumption in other countries. To meet these needs, information has been gathered from many sources as to the wastes and losses in the process of distribution from farms to retail stores. No satisfactory information as to the proportions of supplies of individual commodities reaching consumers through the various channels of distribution - retail stores, door-todoor deliveries, as meals in restaurants and other institutions - is currently available. Therefore, the data on consumption in primary distribution weights were converted to approximate retail weights for this study, despite the fact that substantial quantities of food do not move through retail food stores.

Although estimates of per capita consumption of all major foods are now made regularly, supplemental data on relatively minor commodities and detailed breakdowns of the major groupings were required for analyses of trends in consumption, nutritive analysis, and for comparison with information on food consumption in such countries as Canada and the United Kingdom. Furthermore, until recent years, background data were not available for estimating consumption of some major foods. Realizing that, for some purposes, informed guesses by commodity specialists are preferable to omissions, estimates of per capita consumption were made to carry the series for individual foods, even minor ones, back to 1909. These are given in detail in the following tables. When figures are outright guesses, they are enclosed in parentheses. Otherwise, the data do have some statistical basis and the estimates which correspond to general categories and years indicated in tables 8 to 26 in the preceding chapter were derived from the data in terms of primary distribution weight. The data for individual commodities on a retail basis should be used with great caution. Most of them are far less reliable than the official estimates of per capita consumption in terms of primary weight given in chapter 2. However, they are useful in indicating trends and approximate levels, particularly for groups of foods. For this reason these data are published here despite the known inadequacies.

The conversion or waste factors used to derive each series from the primary distribution weight data are noted on the tables and summarized in table 27. With only a few exceptions, principally for World War II years, the same factors have been applied for the whole period because no data have been found on which to make changes in factors.

Some of the considerations involved in arriving at the estimates of civilian per capita consumption in terms of retail weights deserve special note. For purposes such as nutritive analysis, the fat cuts of
pork belong with the fats and oils rather than with the lean meats. Some trade data have indicated that about 28 percent of the carcass weight of pork is bacon and saltsides and this proportion has been used throughout. The calculation of edible weights of various kinds of commercially caught fish was described in chapter 1 as well as their differences from retail or market weights. But it was necessary to use the edible weights as retail weights. No information is available for estimating the consumption of game fish, that is, noncommercially caught fish. A rough approximation of 1.2 pounds per capita was used throughout the period.

The most troublesome question in regard to the meat group is the estimation of consumption of game, both birds and animals. The only study of this kind found l/, covered the total number and total dressed weight of game birds and mammals killed in 1942 by sportsmen, hunters, trappers, and others on both public and private lands. Statistics on the number of big game killed annually in this country are available for 1942, 1943, and from 1946 to 1951. However, these data are only a part of the total number of game taken in each year. Except for 1942 they do not include small game and fowl. Rough approximations of the quantities of such game and fowl killed were based on the 1942 data and indications of the Fish and Wildlife Service as to changes in numbers of important species and information as to sales of "duck stamps." Commercial production of rabbits for meat has become significant in recent years. But on a per capita basis it is still less than 0.5 pound so estimates of consumption each year are included with the rough approximations of wild game and fowl.

Practices of marketing chicken and turkey have changed from selling them dressed, New York style, to the ready-to-cook form in recent years. For purposes of comparison, the ready-to-cook or eviscerated (including giblets) basis has been used for the entire series. The only data available on which to estimate the consumption of domesticated ducks and geese were those of the decennial censuses on numbers raised. Straight-line interpolations were used for intercensal years. Supply and distribution data for eggs were developed in terms of dozens of eggs; the consumption estimated for eggs in table 8 are in numbers. The factor used to adjust for breakage and spoilage from farm to retail is given in table 27. The average size of eggs has increased recently so 1.5 pounds per dozen eggs were used to obtain per pound equivalents of the number of eggs consumed for each year from 1909 to 1946, then increased to 1.51 for 1947, then 0.01 pound more each year to 1.56 for 1952. Table 30 contains the retail weight data.

Three different methods of calculating overall consumption of dairy products were used for this publication. The first and most

I/ U. S. Department of the Interior, Fish and Wildlife Service. The Case for Continued Hunting of Game Birds and Marmals for the Duration. Mar. 5, 1943. Includes data supplied by the Forest Service of the U. S. Department of Agriculture and by State Fish and Game Departments.
obvious is the sum of the weights of the individual foods. This series is given in table 31 ; it was used in arriving at the total retail weight of all foods consumed per capita. But it is generally more desirable to measure consumption of all dairy products on an equivalent basis. For this purpose the various dairy products are usually evaluated in terms of their relationships to fluid whole milk, frequently on the basis of the fat content, the second measure of overall consumption illustrated in table 9. Nutritionists prefer to combine dairy products in terms of their mineral and protein content as described in chapter 4 and given in table 38. Table 9 also contains the total number of pounds of nonfat milk solids and fat solids consumed per capita in each year.

For the fats and oils group, the primary distribution weights of individual products were used with the addition of the fat cuts of pork, as described above. But it is recogmized that this overlooks the problem of the prepared salad dressings and salad oils. Because these contain ingredients such as sugar and eggs which are already counted in those categories, only the fat and oil content of such products was used for the per capita consumption index described below and for nutritive analysis. This content is identical with the category "other edible oils," described in chapter 2.

The estimates of per capita consumption of fruits and vegetables given in the tables of chapter 2 included commercial production of fruits and vegetables sold as Presh and commercially processed items in terms of processed weights. The estimates of consumption of fresh fruits given in table ll included supplies from commercial production covered by the Crop Reporting Board, plus an estimate of unreported commercial production of strawberries. As noted in chapter 1 , because of statutory restrictions, only the commercial production of apples in certain States and areas has been estimated regularly in the crop reports since 1937. To estimate total consumption of apples in fresh form, indications of the unreported production were computed by comparing commercial production reported by the Crop Reporting Board with census data on production of apples, by states. All of the "unreported production" was assumed to be used fresh, and after allowing for loss from fiarm to retail, was added on a per capita basis to retail equivalents of per capita data from table 11 to develop data for table 33. With the exception of these two fruits, cherries and plums, no attempt has been made to estimate the unreported fruit production because it appears to be relatively quite small for most items, judging from available census data.

A completely revised series on the commercial production of vegetables for fresh sale was described in chapter l. It covers all freshmarket production grown primarily for sale, both production in wellrecognized commercial areas producing mainly for shipment to distant markets and to local market production in areas surrounding major cities. It does not include production for home consumption in farm, ruralnonfarm, or urban gardens. A new series of approximations of the quantities of major vegetables produced for home use has been developed as follows: Farm-home gardens - several censuses of agriculture contain data on the value of vegetables produced on farms for home consumption
and the proportion of farms having such gardens. By using weighted average prices of veretables sold fresh, as reported by the Bureau of Agricultural Economics, the first approximations of the possible number of pounds of garden output for each farm household were obtained. These were checked with a number of Home Management Supervisors of the Farmers Home Administration who had had long experience with advising on and recording output of farm gardens in their States. They also supplied their informed uesses as to types of vegetables grown in farm gardens in their States now and in the past. Revised approximations were then made for the average number of pounds of fresh vegetables produced in farm home gardens and the breakdowns by major kinds of vegetables were developed for census years.

Even less information is available for estimating the output of gardens of rural nontarm and urban households. But such production undoubtedly makes a significant contribution to the country's food supplies. The only sources of information found for use in making rough approximations to fill this gap were studies of family food consumption in individual weeks in 1935-36, 1942, 1944 (urban), 1945 (Georgia and Ohio counties), and sample surveys of production in victory gardens during and following World War II, plus information on changes in numbers of rural-nonfarm households and of households in urban areas with less than 50,000 population. The relationship between consumption of home-produced vegetables reported by farm households and rural-nonfarm households in 1942 was used as a benchmark for estimating the garden output of rural nonfarm households. Changes in the number of such households and rough guesses as to the proportion having gardens were also taken into account. The survey of city gardens made by the Bureau of Labor Statistics in the fall of $19442 /$ provided some indication of the quantity of vegetables supplied by urban home gardens. Here again it was necessary to consider the number of households in towns and small cities and to guess at the proportion having gardens. Fortunately, the victory garden surveys supplied some information on the proportion of rural and urban families having gardens.

The rough approximations of home-garden output by category are given on a per capita basis in table 36 in order to round out the consumption picture for fresh vegetables, but no claim is made for accuracy of level of total production or for breakdown by kind of vegetable. Both may be changed if, and when, a statistically satisfactory, comprehensive survey of garden output is made. These approximations of homegarden output are very different so far as reliability is concerned from the estimates of commercial vegetable production described in chapter 1 , on the basis of which the consumption estimates contained in table 16 were developed and converted to a retail weight basis for table 34 , by means of the factors shown in table 27. Total per capita consumption of fresh vegetables may be obtained by adding per capita output of home gardens to per capita consumption from commercially
produced supplies. It should be noted that a substantial proportion of home-garden output is processed at home so commercial fresh and homegarden fresh vegetables are not directly comparable.

Farm-garden output of potatoes and sweetpotatoes for farm home use are included in the official Crop Reporting Board estimates of production. Relatively few urban gardens include potatoes ánd sweetpotatoes because of the space these crops take. Therefore, output of rural nonfarm gardens was approximated on the basis of information as to the number of rural nonfarm households and the consumption of home-produced potatoes and sweetpotatoes reported in surveys in the spring of $19423 /$ and in one Georgia and one Uhio county in the early summer of 1945.4/

Data on production of canned soups have not been available since 1946; therefore, rough estimates of changes in per capita consumption were made with the assistance of trade information.

The primary distribution data on canned fruits and vegetables are in terms of processed weights, excluding the weight of the tins and jars but including ingredients such as salt and sugar. Data on these processed items and the frozen and dried products require no adjustments to shift from primary distribution weights to retail weights. Therefore, the data in tables 12 to 15 and 18 to 20 are not repeated here. But these data were included in table 38 which summarizes all foods on a retail-weight basis, in terms of the food groups used by the Bureau of Human Nutrition and Home Economics. (See chapter 4.) Likewise, the data on primary distribution weights of tree nuts and peanuts are used as retail-weight equivalents and reference should be made to table 25 of the preceding chapter.

Bakery products include fats, sugar, eggs, and other ingredients already counted elsewhere. Data for making satisfactory estimates of their consumption and content are not available so the per capita consumption of wheat, rye, and corn flours is given in table 23. Consumption of several minor commodities was also estimated on the basis of some production data and these are included in the same table, except soya grits and flour for which data were included in table 35 .

For purposes of overall analysis of consumption, certain adjustments must be made in the data on consumption of sugar to avoid duplication. The estimates of per capita consumption of processed fruits and vegetables, sweetened condensed milk, and frozen dairy products are on a product-weight basis and include the sweetenings used. Some data are available as to the industrial use of beet and cane sugar,

[^7]corn sugar, and corn sirup in dairy products and other broad groups of food items.5/ They are not, however, detailed enough to enable the content of individual sweetenings in such products to be subtracted from the per capita consurnption of each sugar and sirup listed in table 24. Therefore, a summary column was inserted in table 37 for all sugars and sirups combined which excludes their use in the food products listed above as including sweetenings in their product weights. The estimates of sweetening content were based on data from the National Canners Association, the Office of Price Administration, the Production and Marketing Administration, the Bureau of Dairy Industry, and miscellaneous trade and census data. However, it should be noted that this adjusted series on sugar consumed includes quantities of sugars and sirups contained in such products as jams and jellies, soft drinks and confectioneries, for which satisfactory estimates of per capita consumption have not been developed.

Coffee beans were converted to a roasted basis and cocoa beans to a chocolate liquor equivalent of cocoa and chocolate. No change was necessary in the figures for tea (table 37).

Alcoholic beverages were excluded from this study of food consumption. Data on per capita consumption of alcoholic beverages are published in section 30 of the Statistical Abstract of the United States.6/

The processed cormodities listed in tables 12-15, 18-20, and 23 are included with data in tables 28-37 in the food-group totals in table 38 (including subtotals by food groups) and an index was constructed by setting the 1947-49 average equal to 100.

## INDEX OF PER CAPITA FOOD CONSUMPTION

This index of per capita food consumption was developed to describe overall changes in food consumption from year to year and over a period of years. Primarily, it measures changes in quantity, although of necessity it reflects certain changes in quality of foods consumed, such as the shift from lower priced to higher priced foods. It does not reflect price changes per se, because base-period prices (1947-49 averages) are used throughout.

The index as constructed was designed to measure changes in the total quantity of food consumed at the retail level; it utilizes the per capita data of the preceding section of this chapter. It assumes that all food moves through retail stores. This is as close to the actual consumption level as price weights can be constructed. A

[^8]Table 27.- Conversion factors used to obtain retail weight fram primary distribution weight 1/

| Item | $:$$:$ Primary <br> $:$ distribution <br> level 2/  | Factor | $::$   <br> $::$   <br> $::$   <br> $::$   <br> $::$   <br> $:$   | Primary distribution level $2 /$ | Factor |
| :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  | : |  |  |
| Dairy products |  |  | : : F Fresh |  |  |
| Fluid milk and cream | Farm, distributor | 1.0 | : : Apples | Farm | 0.90 |
| Other dairy products | Processor | 1.0 | : : Other Presh fruit: |  | 0.9 |
|  |  |  | : : Apricots | do. | . 91 |
| Meats |  |  | :: Avocados | do. | . 91 |
| Beef | Slaughter | . 79 | :: Banenas | do. | . 92 |
| Veal | do. | . 91 | :: Cherries | do. | . 91 |
| Lamb and mutton | do. | . 89 | :: Cranberries | do. | . 96 |
| Pork, excluding lard |  |  | :: Figs | do. | 1.00 |
| Lean cuts | do. | . 65 | :: Grapes | do. | . 90 |
| Fat cuts | do. | . 28 | :: Peaches | do. | . 89 |
|  |  |  | :: Pears | do. | . 90 |
| Poultry | Slaughter and |  | :: Pineapples | do. | . 85 |
|  | evisceration | 3/1.0 | :: Plums and prunes | do. | . 89 |
| Fish and shellfish |  |  | : : Strawberries | do. | . 89 |
| Fresh and frozen | Market weights |  | : : Canned fruit and juices | Canner | 1.00 |
|  | already converted |  | : : Dried fruit | Packer | 1.00 |
|  | to edible weights | 1.0 | : : Frozen fruit | Packer | 1.00 |
| Canned | Processor | 1.0 | : |  |  |
| Cured | do. | 1.0 | : |  |  |
|  |  |  | : : Fresh vegetables |  | 6/.85 |
| Egg8 | Farm | 4/.97 | :: Leafy, green, and yellow: | Farm | 90 |
| Fats and 0118 |  |  | :: Asparagus | do. | . 91 |
| Butter, actual weight | Processor | 1.0 | : Lima beans | do. | . 92 |
| Lard | do. | 1.0 | :: Snap beans | do. | . 89 |
| Margarine |  |  | :: Cabbage | do. | . 85 |
| Actual weight | do. | 1.0 | : : Carrots | do. | . 90 |
| Shortening | do. | 1.0 | Kale | do. | . 81 |
| Other edible, fat content 5 | do. | 1.0 | :: Lettuce and escarole | do. | . 81 |
|  |  |  | :: Green peas | do. | . 95 |
| Sugar |  |  | :: Peppers | do. | . 87 |
| Refined | Refiner | 1.0 | :: Spinach | do. | . 81 |
| Raw to refined |  | . 935 | :: Tamstoes | do. | . 75 |
|  |  |  | :: Other fresh vegetables: |  |  |
| Sirups | Processor | 1.0 | $\begin{array}{ll} :: & \text { Beets } \\ :: & \text { Ceuliflower } \end{array}$ | do. | . 90 |
|  |  |  | :: Cauliflower | do. | . 86 |
| Dry beans and peas | Farm, cleaned basis | 1.0 | :: Celery | do. | . 86 |
|  |  |  | :: Corn | do. | . 86 |
| Peanuts, kernel basis | Sheller | 1.0 | :: : | do. | . 86 |
| Beverages |  |  | :: Garlic | do. | . 81 |
| Coffee, green bean | Import | 7/.84 | :: Onions | do. | :86 |
| Tea | do. | 1.00 | :: Shallots | do. | . 90 |
| Cocoa beans | do. | 8/.737 | :: Cantaloups | do. | . 85 |
| Fresh fruit |  |  | :: Canned vecetables | Cenner | 1.00 |
| Citrus: |  |  | $:$ : Frozen vegetables | Packer | 1.00 |
| Oranges | Farm | . 95 | : : Potatoes | Farm | . 93 |
| Tangerines | do. | . 91 | : : Sweetpotatoes | do. | . 86 |
| Grapefruit | do. | . 95 | : |  |  |
| Lemons | do. | . 95 | : |  | 1.0 |
| Limes | do. | . 95 | :: Grain products <br> : : | Milling, processing | 1.0 |

1) These factors were based on information from many sources, including special surveys and trade data. (See text.) Many are approximations, but they are the best available at this time. During the war such factors were assembled, reviewed, and published in Conversion Factors and Weights and Measures for Agricultural Comodities and their Products, Production and Marketing Administration, May 1952. 96 pp.
2/ Stage in production and processing at-wich consumption of particular cormodity is measured, as described in chapters 1 and 2.
3/ Factors for obtaining eviscerated weight from live weight: Turkey, 75 percent. Chicken--prior to 1947, 66 percent; 1947 to date, broilers 70 percent, farm chickens 68 percent.
4/ Factor of 0.96 used $1942-46$ to cover additional loss resulting from shortage of wooden cases during the war period.
5/ This category includes fats and oils in cooking and salad oils, in salad dressings, mayonnaise, in bakery products, and for minor uses such as fish canning. To avoid duplication with other foods, no attempt was made to put data on actual weight basis.
6/ Average factor often used for all fresh vegetables, excluding potatoes and sweetpotatoes but including cantaloups, watermelons, and onions.
7/ Roasted.
ㅇ/ Chocolate liquor equivalent of cocoa and chocolate ( 54 percent fat content).

Table 28.- Meats and game: Per capita consumption, retail weight, 1909-52 1/


1/ Civilian consumption beginning 1941. 2/ All mest consumed per capita, including processed, in terms of fresh retail cuts. Carcass weight (at wholesale) converted to retail equivalents using the following average factors: Beef, 79 percent; veal, 91 percent; lamb and mutton, 89 percent; lean pork, 65 percent of carcass weight of pork; fat pork (bacon and salt side), 28 percent of carcass weight of pork. $3 /$ Approximations only. Includes game birds and mammals and commer cially raised rabbits; excludes game fish. For purposes of nutritional analysis it is assumed that about 1.2 pounds of game fish were consumed each year per person. $L /$ Net canned weight; federally inspected only; excludes soups. Note: Consumption of canned meat is included in the data for meats on a "fresh retail cut" equivalent elsewhere in this table. 5 / Preliminary.

Table 29.- Fish: Per capita consumption (edible weight), 1909-52 1/


1/ Civilian only, beginning 1942. 2/ Fresh and frozen fish consumption in the period 1909-28 are based on a straight-line projection, adjusted. 3/ Canned fish consumption estimates 1910-20 based on straight-line projection, adjusted for heavy export and military takings of canned fish from 1915-18; beginning in 1921 based on production reports, packer stocks, and foreign trade statistics for individual years. 4/ Cured fish estimates 1909-28 based on straight-line projection, unadjusted. 5/ Data for 1909 assumed to be same as 1908 which were estimated on basis of the 1908 Census and Department of Comerce foreign trade data. 6/ Less than 0.05 pounds. 7/ Preliminary.

Table 30.- Poultry and eggs: Per sapita consumption, approximate
retail weight, 1909-52 1/


1/ Civilian consumption only, 1941 to date. 2/ Excluding only blood and feathers. Usual form of marketing until after vorld War II. 3/ Ready-to-cook including giblets. Chicken: 1909-46 estimated from dressed weight data using ration of 75 percent (equivalent to 66 percent of live weight); 1947 to date computed from live-weight basis, using 70 percent for commercial broilers and 63 percent for farm chickens. Turkey calculated at 32.4 percent of dressed weight (or 75 percent of live weight). 4/ Based on straight-line projection 1909-28, with rough estimate for 1909. 5/ Rough approximations only. See text. 6/Loss to retail 3 percent, 1909-41 and 1947 to date; 4-percent loss, 1942-46. See text for description of adjustment made for changing size of eggs. I/ Preliminary.
Table 31.- Dairy products:

| Year |  | : Fluid :and ar Freah : nole : | $\begin{aligned} & \text { eam } 2 / \\ & \text { Cream: } \\ & : 3 /: \end{aligned}$ |  | eam $4 /$ Cream used $5 /$ | : Cond $:$ whole $:$ Sreet- $:$ ened | ensed millk : Un- : sweet- : ened | Evapo rated whole milk |  | $\begin{aligned} & \text { ese } 6 / \\ & \vdots \\ & \vdots \\ & \vdots \\ & \vdots \\ & \text { Other } \\ & \vdots \end{aligned}$ | Cottage cheese 7/ |  | $\begin{aligned} & \text { Cul- } \\ & \vdots \text { tured } \\ & \text { butter- } \\ & : \text { milk } \\ & : 8 / \end{aligned}$ |  | $\qquad$ | : Dry: :whole: :milk | Nonfat dry milk solids | $\begin{aligned} & : \text { Dry } \\ & : \text { whey } \end{aligned}$ | :Evapo- :rated : and : con- : $\begin{aligned} & \text { densed } \\ & \text { : akim } \\ & \text { :milk } 9 /:\end{aligned}$, | Malted milk |  | $\begin{aligned} & \hline \text { :Frozen }: \\ & \text { :custard: } \\ & \text { and }: \\ & \text { :malted } \\ & : 10 /: \end{aligned}$ | $\begin{aligned} & \text { Ice } \\ & \text { milk } \end{aligned}$ | $\begin{aligned} & \text { Dry } \\ & \text { butter- } \end{aligned}$ milk |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | : 5 | Lb. | $\underline{L 5 .}$ | It. | Ib. | Lb. | L5. | Lb. | $\underline{L 6 .}$ | L5. | Lb. | I5. | L5. | $\underline{\text { Lb. }}$ | Lb. | $\underline{L b}$ | Lb. | L5. | $\underline{56 .}$ | Lb. | $\underline{L 5 .}$ | $\underline{L 5}$ | $\underline{15}$ | $\underline{\text { Lb. }}$ |
| 1909 | 385 | 274 | 11.0 | 0.4 | 0.4 | 2.3 | 1.7 | 1.4 | 2.4 | 1.4 | 0.6 | 23.2 | 1.3 | --- | 64.3 | 11/ |  |  | 0.6 | --- | --- | --- | --- | --- |
| 1910 | : 362 | 252 | 10.1 | . 5 | . 5 | 2.4 | 1.9 | 1.5 | 2.7 | 1.5 | . 6 | 22.9 | 1.3 |  | 63.3 | $\underline{11}$ | --- | --- | . 7 | --- | --- |  |  | --- |
| 1911 | 350 | 241 | 9.6 | . 6 | . 6 | 2.4 | 2.2 | 1.7 | 2.5 | 1.4 | . 6 | 22.5 | 1.3 | --- | 62.5 | $\underline{11}$ | --- | --- | . 8 | --- | --- | --- | --- |  |
| 1912 | 394 | 284 | 11.4 | . 7 | . 7 | 2.5 | 2.5 | 1.9 | 2.4 | 1.4 | . 7 | 22.3 | 1.3 | --- | 61.8 | IIT | --- | --- | . 8 | --- | --- |  |  |  |
| 1913 | 384 | 274 | 10.9 | . 8 | . 7 | 2.6 | 2.9 | 2.4 | 2.6 | 1.6 | . 7 | 21.9 | 1.3 |  | 60.9 | $\underline{12}$ |  |  | . 9 | --- |  |  |  |  |
| 1914 | : 366 | 257 | 10.3 | . 9 | . 8 | 2.6 | 3.3 | 2.9 | 2.6 | 1.5 | . 7 | 21.6 | 1.3 | - | 59.9 | 11/ | --- | --- | 1.0 | --- | --- |  |  | --- |
| 1915 | 363 | 254 | 10.2 | 1.0 | 1.0 | 3.2 | 2.9 | 3.3 | 2.5 | 1.6 | . 7 | 21.3 | 1.3 | --- | 58.7 | $\underline{11}$ | --- | --- | 1.2 | --- | --- |  |  |  |
| 1916 | 360 | 252 | 10.1 | 1.1 | 1.1 | 3.5 | 2.4 | 3.5 | 2.4 | 1.4 | . 7 | 21.1 | 1.3 | --- | 58.2 | 11 | --- |  | 1.3 | --- | --- |  |  |  |
| 1917 | 370 | 262 | 10.5 | 1.3 | 1.2 | 3.7 | 1.8 | 3.8 | 2.4 | 1.3 | . 6 | 20.8 | 1.3 | --- | 57.3 | $\underline{12}$ | -- |  | 1.5 | --- | --- |  |  |  |
| 1918 | 398 | 289 | 11.6 | 1.7 | 1.6 | 4.0 | 1.4 | 4.7 | 2.8 | 1.1 | . 6 | 20.4 | 1.4 | --- | 55.5 | 11 | --- | --- | 1.8 | --- | --- | --- |  |  |
| 1919 | 374 | 268 | 10.7 | 1.8 | 1.7 | 2.8 | . 7 | 6.3 | 2.8 | 1.4 | . 6 | 19.8 | 1.4 | --- | 54.1 | 0.1 | --- | --- | 2.0 | --- | --- | --- | --- | --- |
| 1920 | : 384 | 278 | 11.1 | 2.0 | 1.9 | . 7 | . 7 | 7.1 | 2.8 | 1.2 | . 6 | 20.0 | 1.4 | --- | 54.6 | . 1 | 0.2 | --- | 1.5 | --- | --- |  |  |  |
| 1921 | 383 | 277 | 11.1 | 2.0 | 1.9 | 1.4 | . 7 | 7.7 | 2.8 | 1.3 | . 4 | 19.7 | 1.4 | 0.7 | 53.8 | $11 /$ | . 2 |  | 1.3 | --- | --- |  |  |  |
| 1922 | 381 | 274 | 10.9 | 2.1 | 2.0 | 1.9 | . 6 | 8.2 | 2.8 | 1.4 | . 5 | 19.5 | 1.4 | . 7 | 53.2 | 11/ | . 2 | --- | 1.4 | 0.1 | --- | --- | --- | --- |
| 1923 | 369 | 262 | 10.5 | 2.3 | 2.2 | 1.7 | . 8 | 8.8 | 3.0 | 1.4 | . 6 | 18.9 | 1.8 | . 7 | 51.6 | $\cdot 1$ | . 4 | --- | 1.8 | . 1 | --- | --- | --- |  |
| 1924 | 375 | 269 | 10.8 | 2.3 | 2.1 | 1.5 | . 7 | 9.4 | 3.2 | 1.3 | . 8 | 18.4 | 1.8 | . 7 | 50.3 | . 1 | . 4 | --- | 1.8 | . 1 | --- |  |  |  |
| 1925 | 376 | 270 | 10.8 | 2.5 | 2.4 | 1.5 | 1.0 | 9.0 | 3.3 | 1.3 | . 9 | 18.2 | 1.8 | . 7 | 49.6 | . 1 | . 4 | --- | 1.9 | . 1 | --- | --- | --- | --- |
| 26 | 375 | 270 | 10.8 | 2.5 | 2.3 | 1.5 | . 7 | 9.5 | 3.2 | 1.4 | 1.0 | 17.9 | 2.2 | . 7 | 48.1 | . 1 | . 5 | --- | 2.4 | . 2 | --- | --- | --- | --- |
| 1927 | : 373 | 269 | 10.8 | 2.6 | 2.5 | 1.3 | . 9 | 9.3 | 3.1 | 1.4 | 1.0 | 17.4 | 2.2 | 1.1 | 46.8 | . 1 | . 7 | --- | 2.4 | . 2 | --- |  |  |  |
| 1928 | : 374 | 270 | 10.8 | 2.6 | 2.5 | 1.2 | . 7 | 10.1 | 2.9 | 1.5 | 1.2 | 17.2 | 2.2 | 1.1 | 46.3 | . 1 | . 8 | --- | 2.7 | . 2 | --- | --- | --- |  |
| 1929 | : 379 | 272 | 10.9 | 2.9 | 2.8 | 1.2 | 1.2 | 11.0 | 3.2 | 1.4 | 1.2 | 17.1 | 2.6 | 1.1 | 46.0 | . 1 | 1.1 | --- | 3.0 | . 2 | --- | --- | --- | --- |
| 1930 | : 376 | 270 | 10.8 | 2.7 | 2.6 | 1.3 | 1.0 | 11.1 | 3.1 | 1.5 | 1.2 | 16.9 | 2.6 | 1.1 | 45.5 | . 1 | 1.3 | --- | 2.6 | . 2 | --- | --- | --- | --- |
| 1931 | : 372 | 268 | 10.7 | 2.3 | 2.2 | 1.0 | . 9 | 11.4 | 3.1 | 1.4 | 1.2 | 16.9 | 3.0 | 1.5 | 44.8 | . 1 | 1.4 | --- | 2.4 | . 1 | --- |  |  |  |
| 1932 | : 376 | 271 | 10.8 | 1.7 | 1.6 | . 8 | . 8 | 12.2 | 3.0 | 1.4 | 1.2 | 17.1 | 2.9 | 1.8 | 45.3 | . 1 | 1.4 |  | 2.2 | . 1 | 0.1 |  | --- |  |
| 1933 | : 376 | 270 | 10.8 | 1.6 | 1.6 | . 7 | . 7 | 12.2 | 3.1 | 1.4 | 1.2 | 17.5 | 2.9 | 2.2 | 46.4 | . 1 | 1.4 | --- | 2.0 | . 1 | . 1 | --- | --- | --- |
| 1934 | : 366 | 258 | 10.3 | 1.9 | 1.8 | . 7 | . 7 | 13.3 | 3.4 | 1.4 | 1.2 | 17.4 | 2.9 | 2.6 | 46.0 | . 1 | 1.5 | --- | 2.2 | . 1 | . 2 | --- | --- |  |
| 1935 | : 37 | 261 | 10.4 | 2.2 | 2.1 | . 7 | . 8 | 14.5 | 3.7 | 1.5 | 1.3 | 17.2 | 2.9 | 2.9 | 45.6 | . 1 | 1.6 | --- | 2.4 | . 1 | . 2 | --- | --- |  |
| 1936 | : 374 | 264 | 10.6 | 2.2 | 2.1 | . 7 | 1.0 | 13.9 | 3.8 | 1.6 | 1.4 | 16.9 | 3.3 | 3.0 | 44.7 | . 1 | 1.7 |  | 2.8 | . 1 | . 3 | --- | --- | --- |
| 1937 | : 378 | 265 | 10.6 | 2.9 | 2.7 | . 7 | 1.0 | 14.8 | 3.9 | 1.6 | 1.5 | 16.6 | 3.4 | 3.4 | 44.0 | . 1 | 1.9 | 0.1 | 3.0 | . 1 | . 3 | --- | --- | --- |
| 1938 | : 376 | 263 | 10.5 | 2.8 | 2.7 | . 6 | 1.0 | 15.4 | 4.2 | 1.6 | 1.6 | 16.3 | 3.8 | 3.8 | 42.6 | . 1 | 2.1 | . 1 | 3.1 | . 1 | . 3 | --- | --- |  |
| 1939 | : 379 | 266 | 10.6 | 3.0 | 2.8 | . 7 | . 8 | 16.1 | 4.2 | 1.6 | 1.8 | 16.1 | 3.8 | 3.8 | 42.0 | . 1 | 2.1 | . 1 | 2.9 | . 1 | . 7 | - |  | 0.1 |
| 1940 | : 380 | 265 | 10.6 | 3.1 | 3.0 | . 8 | 1.0 | 17.3 | 4.3 | 1.6 | 1.9 | 15.9 | 4.2 | 3.8 | 40.5 | . 1 | 2.2 | . 1 | 3.2 | . 1 | . 4 | 0.1 | 0.4 | . 1 |
| 1941 | : 384 | 267 | 10.7 | 3.7 | 3.6 | . 8 | . 9 | 16.6 | 4.3 | 1.5 | 2.0 | 15.8 | 4.6 | 4.2 | 40.4 | . 2 | 2.4 | . 1 | 3.9 | . 1 | . 4 | . 2 | . 5 | . 2 |
| 1942 | : 408 | 290 | 10.2 | 4.3 | 4.1 | 1.0 | . 9 | 16.3 | 4.7 | 1.6 | 2.1 | 15.4 | 5.1 | 4.7 | 39.2 | . 2 | 2.5 | . 1 | 4.3 | . 2 | . 4 | . 2 | . 5 | . 2 |
| 1943 | : 432 | 325 | 11.1 | 3.4 | 3.6 | . 9 | . 8 | 16.9 | 3.0 | 1.9 | 2.2 | 14.6 | 5.9 | 5.0 | 36.0 | . 4 | 2.1 | . 1 | 5.1 | . 4 | 2.4 | . 2 | . 3 | . 2 |
| 1944 | : 441 | 328 | 10.7 | 3.6 | 3.9 | 1.0 | . 9 | 13.6 | 3.0 | 1.8 | 2.3 | 14.1 | 6.5 | 5.6 | 34.6 | . 3 | 1.5 | . 2 | 5.9 | . 3 | 2.5 | . 2 | . 3 | . 2 |
| 1945 | 456 | 335 | 10.2 | 4.1 | 4.2 | . 9 | 1.0 | 16.1 | 4.7 | 1.9 | 2.9 | 13.9 | 7.0 | 6.1 | 34.2 | . 4 | 1.9 | . 1 | 7.6 | . 3 | 3.2 | . 2 | . 4 | . 2 |
| 1946 | : 448 | 323 | 10.6 | 6.3 | 6.0 | . 8 | . 7 | 16.8 | 4.4 | 2.2 | 2.9 | 13.5 | 6.5 | 5.7 | 33.4 | . 5 | 3.2 | . 2 | 9.6 | . 3 | . 6 | . 2 | . 5 | . 1 |
| 1947 | : 428 | 306 | 10.0 | 5.6 | 5.4 | . 9 | 1.2 | 17.9 | 5.1 | 1.7 | 2.6 | 13.4 | 7.2 | 6.4 | 33.1 | . 4 | 2.9 | . 2 | 6.9 | . 2 | . 5 | . 2 | . 5 | . 2 |
| 1948 | : 412 | 295 | 9.7 | 4.9 | 4.7 | . 3 | 1.4 | 18.1 | 5.1 | 1.7 | 2.9 | 12.7 | 7.3 | 6.5 | 31.2 | . 3 | 3.3 | . 1 | 5.3 | . 1 | . 5 | . 2 | . 6 | . 2 |
| 1949 | : 412 | 296 | 9.0 | 4.9 | 4.7 | . 5 | 1.4 | 17.6 | 5.3 | 1.9 | 3.1 | 12.4 | 7.4 | 6.6 | 30.5 | . 2 | 3.2 | . 2 | 5.4 | . 1 | . 6 | . 2 | . 9 | . 2 |
| 1950 | : 410 | 293 | 8.9 | 4.9 | 4.6 | . 6 | 1.3 | 17.9 | 5.4 | 2.2 | 3.5 | 21.9 | 8.3 | 7.4 | 28.7 | . 3 | 3.6 | . 2 | 5.0 | . 2 | . 7 | . 3 | 1.1 | . 2 |
| 1951 | 412 | 299 | 8.4 | 4.8 | 4.6 | . 5 | 1.5 | 16.0 | 5.0 | 2.1 | 3.8 | 11.2 | 8.5 | 7.6 | 27.1 | . 3 | 4.2 | . 1 | 4.8 | . 2 | . 9 | . 3 | 1.3 | . 1 |
| 195212 | \%: 413 | 299 | 8.4 | 4.9 | 4.7 | . 5 | 1.4 | 15.5 | 5.4 | 2.3 | 3.8 | 11.4 | 8.5 | 7.6 | 27.2 | . 4 | 4.4 | . 2 | 4.5 | . 2 | 1.2 | . 3 | 1.3 | . 2 |

[^9]Table 32.- Fats and oils: Per capita consumption, retail weight, 1909-52 / /


1/ Civilian only, 1941 to date.
2/ Estimated to be 28 percent of carcass weight of pork.
3 Represents fats and oils used in cooking and salad oils, salad dressing, and mayomaise,
4/ Preliminary.
Table 33.- Freah fruits: Per capita consumption, retail weight, 1909-52 1/


[^10]

[^11]Table 35.- Potatoes, sweetpotatoes, dry edible beans, dry field peas, and soya grits and flour: Per capita consumption, approximate retail weight, 1909-52 1


1 Civilian consumption only, beginining 1941. Calendar-year basis except for dry field peas for which year begins in September of year indicated. Data for potatoes and sweetpotatoes include farm garden production but exclude nonfarm garden output. Data for dry beans and peas exclude all home-garden produce. Data in parentheses are rough approximations only. $2 /$ Retail weight estimated at 93 percent of primary distribution or farm weight. $3 /$ Retail weight estimate at 86 percent of primary distribution or farm weight. $4 /$ Cleaned basis. 5/ Preliminary.

Table 36.- Rough approximations of per capita consumption of vegetables, potatoes and sweetpotatoes from home-garden production, 1909-52 1

$1 /$ Rough approxdmations of consumption of the produce from farm, rural nonfarm, and urban gardens. 2 Includes snap beans, lima beans, peas, cabbage, lettuce, other greens, pumpkin and squash, and miscellaneous leafy, green, and yellow vegetables. 3/ Includes onions, radishes, beets, cucumbers, sweet corn, and miscellaneous other vegetables. \&/ Excludes farm-garden output. 5/ Preliminary.

Table 37.- Sugars, sirups, and beverages: Per capita consumption, approximate retail weight, 1909-52 1


1/ Civilian consumption beginning 1941. 2/ Approximate quantities of sugar used in production of canned and frozen fruit, canned fruit juices, canned vegetables, unskimmed sweetened condensed milk, and frozen dairy products except ice cream. These were deducted to avoid duplication in the nutritional anslysis of the food supply. Information on ice cream was supplied to nutritionists in terms of net milk and cream content only. 3/Equivalent to 84 percent of green beans. 4/ Chocolate liquor ( 54 percent fat content) used in products, equivalent to 73.7 percent of cocoa beans. 5) Preliminary.

Table 38. - Approximate consumption of food per capita, retail-weight equivalent, by major food groups; total in pounds and in comparison with 1947-49 average, 1909-52 1/


1/ See text for description of methods used and discussion of limitations of data. Civilian consumption only, lgli to date.
2/ Computed from data in table 31 with factors based primarily on mineral and protein constituents as given on page l64. Factors
 weighs 2.15 pounds.

3/ Data from table 31.
4/ Data from table 30. Allows for breakage from farm to retail and increasing size of eggs in recent years.
5 Data from tables 28, 29, and 30. Excludes fat pork cuts; includes game fish; poultry on eviscerated basis.
6/ Data from table 32. Product weight except for "other edible fats and oils," which represents oils used in salad dressings etc.
7/ Data from tables 25, 35, and 36.
8/ Data from tables 18, 35, and 36.
9/ Data from tables 12, 13, 14, 18, 19, 33, 34, and 36. Product weight except for concentrated citrus juices, vinch are on a single-strength basis. Soup estimated to be approximately one-third tomato through lg 45 ; thereafter, percentage tomato reduced gradually to 20 percent in current years.
$10 /$ Data from tables $18,19,20$, 34 , and 36 . For purposes of nutritional analysis vegetable baby foods are assumed to be "leafy, green, and yellow."

11 Data from tables $12,13,14,15,18,19,20,33,34$, and 36 . Includes soups other than tomato - see footnote 9 .
12/ Excludes corn sugar and sirup. Data from table 23.

 molasses and honey) see table 24.

14/ Data from table 37. Includes coffee on roasted basis and chocolate liquor equivalent of cocoa and chocolate products.
15/ Preliminary.
price-weighted index is superior to a simple index derived from the total poundage of foods consumed because it combines the various foods on the basis of their relative economic importance, reflecting consumer preference and cost of production and marketing. However, the use of retail prices as weights does result in combining the effects of shifts in consumption among foods having different processing and marketing costs with the effects of quantitative changes.

The index of per capita food consumption was computed with fixedprice weights according to the Laspeyres formula

where $p_{0}=$ average retail price in 1947-49

$$
\begin{aligned}
& q_{0}=\text { average quantity consumed in 1947-49 } \\
& q_{i}=\text { average quantity consurned in given year }
\end{aligned}
$$

In constructing an index that uses fixed weights the question arises as to the applicability of base-period price relationships to consumption patterns in years distant from the base period. After study of indexes constructed with 1935-39 prices and with 1947-49 prices, it was found that the use of postwar prices decreases by about 2 percentage points the relative importance of dairy products and increases that of meats about 1 percentage point and those of some other food groups very slightly. The shifts in price relationships have been offsetting; they do not influence the overall index of food consumption. Because of this, 1947-49 prices were used throughout.

Food items were grouped into 11 categories: Dairy products (excluding butter); meats, fish, and poultry; eggs; fats and oils, including butter; potatoes and sweetpotatoes; dry beans, peas, and nuts; all other vegetables; all fruits, including melons; cereal products; sugars and sirups; coffee, tea, and cocoa. The overall index and subindexes are given in table 39.

The index of per capita food consumption given below has been revised (1) to a postwar base, 1947-49; (2) to achieve more uniformity in handling the several food groups; and (3) to include detailed estimates for additional foods.

Selection of Retail Prices as Weights
The following description of the processes, sources, and reasoning entering into the selection of retail prices for each food item is given in detail. It is believed that the prices selected reflect satisfactorily the price relationships among the many foods covered in the base period; however, they are not precise and the degree of accuracy can be judged only after consideration of the methods and sources used. Much effort has been expended in comparing these prices with all available information on wholesale and retail prices because they are expected to have uses other than the construction of this index.

Table 39.- Index of per capita food consumption (price-weighted basis), 1909-52 1/
$(1947-49=100)$


Table 39.- Index of per capita food consumption (price-weighted basis), 1909-52 I/ -Contd. (1947-49 = 100)

|  |  | Vege | tables |  | : $\quad$ : |  | : |  | : |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year | Fresh | Canned | $:$ Other $:$ : proc- $:$ essed $:$ products: $: 2 /:$ | Total | $:$ Potatoes: $:$ and $:$ $:$ sweet- : $:$ potatoes: $:$ $: \quad:$ | Beans, peas, nuts |  | Sugar and <br> sirups | Coffee, tea and cocoa | All <br> food |
| 1909 | : 93 | 39 | 2 | 73 | 176 | 82 | 131 | 58 | 60 | 89 |
| 1910 | 93 | 37 | 3 | 72 | 184 | 79 | 131 | 59 | 58 | 88 |
| 1911 | 91 | 40 | 4 | 72 | 151 | 79 | 128 | 61 | 56 | 88 |
| 1912 | : 93 | 48 | 5 | 74 | 167 | 79 | 126 | 60 | 67 | 89 |
| 1913 | : 89 | 51 | 6 | 72 | 173 | 80 | 125 | 63 | 56 | 87 |
| 1914 | : 92 | 49 | 9 | 74 | 148 | 76 | 125 | 63 | 58 | 87 |
| 1915 | : 90 | 46 | 9 | 73 | 172 | 77 | 124 | 60 | 66 | 87 |
| 1916 | 91 | 42 | 9 | 73 | 141 | 74 | 124 | 60 | 71 | 86 |
| 1917 | : 91 | 49 | 9 | 74 | 148 | 93 | 120 | 61 | 79 | 85 |
| 1918 | : 92 | 58 | 9 | 77 | 166 | 82 | 115 | 61 | 69 | 87 |
| 1919 | : 90 | 56 | 10 | 75 | 154 | 95 | 118 | 71 | 69 | 88 |
| 1920 | : 96 | 47 | 10 | 77 | 144 | 77 | 113 | 69 | 70 | 87 |
| 1921 | : 93 | 44 | 11 | 75 | 153 | 80 | 107 | 68 | 70 | 85 |
| 1922 | : 95 | 45 | 17 | 77 | 145 | 78 | 113 | 81 | 71 | 89 |
| 1923 | : 92 | 55 | 21 | 78 | 162 | 89 | 113 | 72 | 77 | 91 |
| 1924 | : 95 | 59 | 17 | 79 | 138 | 93 | 111 | 86 | 74 | 92 |
| 1925 | : 95 | 66 | 13 | 81 | 141 | 91 | 114 | 88 | 67 | 91 |
| 1926 | : 95 | 68 | 14 | 81 | 124 | 90 | 116 | 89 | 75 | 92 |
| 1927 | : 95 | 57 | 16 | 79 | 137 | 98 | 116 | 88 | 72 | 91 |
| 1928 | : 95 | 58 | 18 | 79 | 136 | 97 | 116 | 90 | 70 | 91 |
| 1929 | : 99 | 67 | 21 | 84 | 147 | 93 | 115 | 84 | 73 | 91 |
| 1930 | : 102 | 73 | 17 | 87 | 122 | 91 | 115 | 93 | 73 | 91 |
| 1931 | : 99 | 65 | 12 | 83 | 128 | 99 | 113 | 86 | 76 | 90 |
| 1932 | : 102 | 56 | 12 | 83 | 135 | 90 | 113 | 82 | 73 | 88 |
| 1933 | : 101 | 57 | 11 | 82 | 129 | 86 | 109 | 82 | 76 | 88 |
| 1934 | : 101 | 60 | 17 | 84 | 133 | 95 | 103 | 82 | 72 | 89 |
| 1935 | : 99 | 66 | 20 | 84 | 138 | 101 | 105 | 90 | 79 | 87 |
| 1936 | : 100 | 69 | 24 | 86 | 122 | 105 | 107 | 91 | 81 | 91 |
| 1937 | 100 | 73 | 33 | 87 | 121 | 101 | 104 | 89 | 78 | 90 |
| 1938 | 101 | 78 | 35 | 89 | 123 | 107 | 105 | 88 | 85 87 | 91 |
| 1939 | 106 | 80 | 43 | 94 | 116 | 109 | 104 | 94 | 87 | 94 |
| 1940 | 106 | 87 | 47 | 95 | 112 | 110 | 105 | 94 | 90 | 95 |
| 1941 | 105 | 92 | 49 | 96 | 118 | 108 | 106 | 102 | 93 | 97 |
| 1942 | 108 | 98 | 58 | 101 | 120 | 113 | 107 | 90 | 77 | 97 98 |
| 1943 | 113 | 91 | 47 | 101 | 121 | 103 | 119 | 84 | 73 | 98 101 |
| 1944 | 119 | 86 | 66 | 107 | 128 | 107 | 108 | 92 | 86 89 | 102 |
| 1945 | 122 | 105 | 77 | 114 | 114 | 109 | 114 | 76 | 89 109 | 102 |
| 1946 | 113 | 118 | 86 | 111 | 114 | 104 | 113 | 81 | 109 | 104 |
| 1947 | 102 | 105 | 91 | 102 | 111 | 98 | 101 | 99 | 97 | 102 |
| 1948 | 101 | 96 | 105 | 101 | 92 | 103 | 100 | 101 | 101 | 99 |
| 1949 | 96 | 99 | 104 | 98 | 97 | 100 | 99 | 100 | 103 | 99 100 |
| 1950 | : 95 | 107 | 110 | 99 | 92 | 106 | 99 | 101 | 91 | 100 |
| 1951 | 93 | 107 | 119 | 99 | 90 | 100 | 98 | 102 | 92 93 | 99 101 |
| 1952 3/ | 93 | 108 | 133 | 101 | 85 | 100 | 97 | 101 | 93 | 101 |

1/ Derived from data on per capita consumption of individual foods, using estimates of retail weights multiplied by average retail prices in 1947-49. Givilian consumption only, beginning 1941.

2/ Includes frozen vegetables, canned soups, and canned baby foods.
3/ Preliminary.

The average retail prices used for the base period were compiled from several sources. (See table 40.) Retail prices collected by the Bureau of Labor Statistics provided the basic material for the prices of major foods. Because BLS prices refer to a specific grade of goods, usually a high grade, sold in cities, those prices were adjusted by the Bureau of Agricultural Economics, using data on prices paid by farmers, to approximate the average price for all grades and for rural areas as well as cities. Such adjusted prices were used whenever available, and they are referred to in the following discussion as the BAE estimated average retail prices. When such a price was not available, or was not applicable, the official BIS figure was used. When no prices were available for the 3 years of the base period, special surveys were relied upon to indicate levels of prices and price relationships but so far as possible they were checked with other data. Among such special surveys were those of retail prices of particular foods made by the Bureau of Labor Statistics in the process of revising the index of prices paid for food by moderate-income families in large cities. Another was the survey of urban food consumption by the Bureau of Human Nutrition and Home Economics in the spring of 1948. This survey is referred to hereafter as the 1948 Urban Survey, using U. S. spring data except when noted otherwise. Other sources used for prices of a few individual foods are described in the sections that follow.

When retail prices were not reported in terms of l-pound units in which consumption data were reported, the prices were adjusted to the l-pound equivalent, as, for example, wheat cereal. In other cases, consumption data are given in terms of the "primary" product rather than the refined or manufactured product, so the adjustment was made in the price. This was done in the cases of macaroni and cocoa beans.

Meat, Fish, Poultry. - No attempt was made to adjust prices of fresh cuts of meat for processed meat, either canned or cured, because a relatively small proportion is processed. Also, more of the cheaper gràdes are processed, and their prices are not adequately reported. The average price for beef in urban areas was derived by weighting prices of the cuts priced by the Bureau of Labor Statistics by quantities based on information obtained in the survey of purchases of food by urban consumers in the spring of 1951, made by the Bureau of Labor Statistics.7/ The urban price was reduced by 2 percent to allow for slightly lower prices in rural areas, according to information from surveys of consumer purchases. Such information indicates little diffference between prices for veal and lamb in rural and in urban areas. The price of veal was estimated by applying to the Bureau of Labor Statistics price of veal cutlets the relationship between the approximate average price of all veal cuts in New York City and the price of veal cutlets in that city in 1947-50 ( 62 percent). A similar procedure was followed in estimating the average price for lamb and mutton in 1947-49 from the Bureau of Labor Statistics prices of leg of lamb,
applying the monthly ratios of the price for all lamb to the retail price for leg of lamb in New York City. The revised BAE price for pork in urban areas was estimated by combining Bureau of Labor Statistics prices for 3 pork cuts according to the yield of these cuts and related ones from the pork carcass. This approximation of a weighted price for major cuts was adjusted to allow for minor cuts by means of the relationship of the wholesale value of major cuts to total wholesale value of all pork excluding lard at Chicago. The urban price for pork was lowered 3 percent to allow for lower prices in rural areas.

Offals were included in the revised index, using the average price from the 1948 Urban Survey, adjusted downward slightly to compensate for lower prices in rural areas.

The BLS has some unpublished data for 1947-49 on retail prices of fish, presumably fresh, that sell in largest volume which check well with 1948 Urban Survey data. However, our data on fresh and frozen fish are combined and on an edible weight basis so the price had to be adjusted to match. Data on imports of frozen fish and domestic freezings for 1947 to 1949 indicate that a little more than a third of the combined per capita consumption of fish for those years was frozen, generally sold at retail in form ready for cooking. The retail equivalent weight of the fresh fish approximated 7 to $71 / 2$ pounds. Accordingly, the total retail-weight equivalent might be about 9 to $91 / 2$ pounds. Shellfish probably accounted for roughly $11 / 2$ pounds of the total. A price of 75 cents a pound for shellfish at retail appears reasonable. Combining the derived value of shellfish and the product of the BLS price of 42 cents a pound times 8 pounds of fish other than shellfish, a total retail value of $\$ 4.50$ was obtained. This, divided by the total edible weight of fresh and frozen fish, yielded 70 cents as the retail price equivalent per pound of fresh and frozen fish. The 1948 Urban Survey prices for canned and cured fish checked out well with available wholesale price data so they were used.

The BAE price for New York dressed chickens was used. Retail prices are not reported for turkeys so a price on dressed weight basis was estimated at 130 percent of the retail price per pound of chicken meat. This percentage is midway between the 1947-49 ratio of farm prices of turkeys to prices of chickens and the relationship derived using the markup in cents from farm price of chickens to retail price of chicken meat.

Eggs.- The BAE estimate of the average retail price of eggs was used. The estimate was somewhat lower than the BLS estimate, as the BLS reports one grade of eggs sold in cities, whereas the BAE figure represents the average of all grades in both urban and rural areas.

Dairy Products.- For the revision of the index, consumption of fluid cream has been estimated separately from fluid milk in order to permit the introduction of skim milk products into the computation of the index. Prices of fluid milk are reported by BLS and BAE so an average price was readily available. Although retail prices of fluid cream are reported for some Federal-order milk markets, they cannot be regarded as representative for the country as a whole. Prices for

| Commodity |  | Retail price |  | Per capita consumption in 1947-49 | Value agcregates 1) | Percentage of value aggregates |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | Source 2/ | 1947-49 |  |  | $\begin{aligned} & \text { Of group } \\ & : \text { total } \end{aligned}$ | $\begin{aligned} & : \text { of erand } \\ & : \quad \text { total } \\ & \hline \end{aligned}$ |
|  |  |  | Cents | Pounds | Dollars | Percent | Percent |
| Meat, I1sh, and poultry |  |  |  |  |  |  |  |
| Meat |  |  |  |  |  |  |  |
| Beef |  | Other | 61.8 | 51.0 | 31.5180 | 31.3 | 9.8 |
| Veal |  | do. | 57.8 | 8.8 | 5.0864 | 5.1 | 1.6 |
| Lamb and mattion |  | do. | 63.9 | 4.2 | 2.6838 | 2.7 | . 8 |
| Pork (including bacon and salt side) |  | do. | 51.2 | 62.7 | 32.1024 | 31.9 | 10.0 |
| OPPals |  | do. | 58.0 | 10.4 | 6.0320 | 6.0 | 1.9 |
| Total meat |  |  |  |  | 77.4226 | 77.0 | 24.1 |
| Fish |  |  |  |  |  |  |  |
| Fresh (edible veight) |  | Other | 70.0 | 5.9 | 4.1300 | 4.1 | 1.3 |
| Canned |  | BHNHE | 78.6 | 3.8 | 2.9868 | 3.0 | . 9 |
| cured |  | do. | 72.0 | . 6 | . 4320 | . 4 | . 1 |
| Total Pish |  |  |  |  | 7.5488 | 7.5 | 2.3 |
| Poultry |  |  |  |  |  |  |  |
| Chicken (dressed weight) |  | BAE | 53.9 | 23.7 | 12.7743 | 12.7 | 4.0 |
| Turkey (dressed weight) |  | Other | 69.7 | 4.0 | 2.7880 | 2.8 | . 9 |
| Total poultry |  |  |  |  | 15.5623 | 15.5 | 4.9 |
| Eggs Total meat, fish, and poultry |  |  |  |  | 100.5337 | 100.0 | 31.3 |
| $\frac{\text { Legs }}{\text { Dairy products }}$ |  | BAB | 43.2 | 46.7 | 20.1744 | 100.0 | 6.3 |
| Fluid nilk |  | BAE | 9.3 | 299 | 27.8070 | 52.3 | 8.7 |
| Fluid cream |  | Other | 40.0 | 9.6 | 3.8400 | 7.2 | 1.2 |
| Cheese |  | bas | 58.3 | 6.9 | 4.0227 | 7.6 | 1.3 |
| Condensed and evaporated milk Ice cream (actual waight) |  | do. | 12.8 | 19.8 | 2.5344 | 4.8 | . 8 |
| Ice cream (actual weight) |  | BHNHR | 52.8 | 18.5 | 9.7680 | 18.4 | 3.0 |
| Fluld skim milk |  | do. | 6.0 | 38.9 12.8 | 2.3340 .7040 | 4.4 | . 7 |
| Milk in chocolate drinks |  | do. | 9.4 | 6.5 | . 6110 | 1.1 | . 2 |
| Honfat dry milk sollds |  | do. | 25.0 | 3.1 | . 7750 | 1.5 | . 2 |
| Cottage cheese |  | do. | 25.6 | 2.9 | . 7424 | 1.4 | . 2 |
| Total dairy products Excluding butter |  |  |  |  |  |  |  |
| Excluding butter Including butter |  |  |  |  | 53.1385 | 100.0 | 16.5 |
| Fats and 011s | : |  |  |  | 61.3180 |  |  |
| Butter |  | BAE | 77.9 | 10.5 | 8.1795 | 38.9 | 2.5 |
| Lard |  | Other | 27.0 | 12.2 | 3.2940 | 15.7 | 1.0 |
| Shargarine | : | BAE | 37.7 | 5.5 | 2.0735 | 9.9 | 1.7 |
| Shortening | : | do. | 38.7 52.7 | 9.5 | 3.6765 | 17.5 | 1.7 |
| Total Pats and 011s |  | \% | 52.7 | 7.2 | 3.7944 | 18.0 | 1.2 |
| Including butter Excluding butter | : |  |  |  | 21.0179 | 100.0 | 6.5 |
| Fruits Excluaing butter | : |  |  |  | 12.8384 |  | 6.5 |
| Fresh |  |  |  |  |  |  |  |
| Oranges and tangerines | : | BAB | 9.0 | 35.3 | 3.1770 | 13.5 | 1.0 |
| Crapefruit | : | Other | 7.3 | 11.6 | . .1468 | 13.5 3.6 | 1.0 .3 |
| Lemons and limes | : | do. | 17.2 | 4.3 | . 7396 | 3.1 | . 2 |
| Apples | : | BAE | 11.6 | 27.7 | 3.2132 | 13.7 | 1.0 |
| Grapes |  | Other | 15.9 14.0 | 18.9 5.3 | 3.0051 .7420 | 12.8 | . 9 |
| Peaches |  | do. | 11.0 | 11.1 | 1.2210 | 3.2 5.2 | . 2 |
| Pears Cantaloups | : | B Bintis | 14.9 | 4.9 | . 7301 | 3.1 | . 2 |
| Cantaloups Watermelons | : | Other | 7.3 | 6.5 | . 4745 | 2.0 | . 1 |
| Other | : | do. | 3.0 | 14.3 | . 4290 | 1.8 | . 1 |
|  |  | do. | 13.5 3.9 | 6.2 | . 8370 | 3.6 | . 3 |
| Total fresh | : | do. | 3.9 | 12.5 | $\frac{.4875}{15.9028}$ | $\frac{2.1}{67.7}$ | . 2 |
| Canned | : |  |  |  | 15.9028 | 67.7 | 4.9 |
| Apples and applesauce |  |  | 14.7 | 1.8 | . 26446 |  |  |
| Apricots | : | Other | 19.0 | 1.0 | . 1900 | 1.1 | . 1 |
| Peaches Pears | : | BAE BHNHIS | 17.4 19.8 | 4.5 | . 7830 | 3.3 | . 2 |
| Pineapple | : | BLS | 19.6 | 2.8 | .2574 .5488 | 1.1 | . 1 |
| 8alad and cocktail | : | binitis | 21.5 | 2.8 | . 5488 | 2.4 1.9 | . 2 |
| Other Total canned |  | do. | 18.9 | 4.6 | . 8694 | 1.9 3.7 | -1 |
| Canned Juices | : |  |  |  | 3.3647 | $\frac{3.7}{14.3}$ | $\frac{.3}{1.1}$ |
| Orapetruit | : | Other | 8.8 |  |  |  |  |
| Orange | : | do. | 12.0 | 3.3 4.3 | .2904 .5160 | 1.3 | . 1 |
| Blend <br> Other | : | do. | 11.0 | 2.1 | . 23160 | 2.2 | . 1 |
| Other Fotal camed Juices | : | do. | 15.4 | 6.3 | $\begin{array}{r}.2310 \\ .9702 \\ \hline\end{array}$ | 1.0 | .1 |
| Frotal camed Juices | : |  |  | 6.3 | $\underline{.9702}$ | $\frac{4.1}{8.6}$ | . 3 |
| Concentrated Juices | : | Other | 54.4 | . 4 |  |  |  |
| Fruits Total frozen | : | BHINTIP | 35.0 | 2.9 | .2176 1.0150 | .9 4.3 | .1 |
| Dried fruits | : |  |  | 2.9 | $\frac{1.0150}{1.2326}$ | $\frac{4.3}{5.2}$ | . 3 |
| Prumes | : | BAE | 23.3 |  |  |  |  |
| Raisins | : | Other | 19.4 | 1.2 | . 2796 | 1.2 | . 1 |
| Other | : | do. | 30.0 | 1.8 | . 3492 | 1.5 | . 1 |
| Total dried | : | +. | 30.0 | 1.2 | . 3600 | 1.5 | . 1 |
| Total fruits | : |  |  |  | . 9888 | 4.2 | . 3 |
|  | : |  |  |  | 23.4965 | 100.0 | 7.3 |

Table 40. - Index of per capita food consumotion: Average retail prices in 1947-49, average quantities consumed in 1947-49 (retail weights in pounds), value aggregates, and percentage comparisons $1 /$ - Continued

| Commodity | : | Retail price |  | Per cap1ta <br> consumption <br> $:$ in $1947-49$ | Value aggregates 1 | Percentage of value aggregates |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | : | Source 2/ | $: 1947-49$ |  |  | $\begin{aligned} & \text { Of group } \\ & : \text { totel } \end{aligned}$ | $\begin{aligned} & \text { of grand } \\ & : \quad \text { total } \end{aligned}$ |
|  | : |  | Cents | Pounds | Dollars | Percent | Percent |
| Vegetables | : |  |  |  |  |  |  |
| Fresh | : |  |  |  |  |  |  |
| Beans, snap | : | BAE | 20.7 | 4.1 | 0.8487 | 2.3 | 0.3 |
| Cabbage | : | do. | 6.2 | 13.8 | . 8556 | 2.3 | 0.3 |
| Carrots | 8 | do. | 11.1 | 8.1 | . 8991 | 2.3 2.5 | . 3 |
| Celery | : | BHIHE | 18.2 | 7.0 | 1.2740 | 3.5 | . 4 |
| Corn | : | do. | 6.3 | 6.8 | . 4284 | 1.2 | . 1 |
| Lettuce | : | bas | 13.7 | 14.0 | 1.9180 | 5.2 | . 6 |
| Onions | : | do. | 9.0 | 10.2 | . 9180 | 2.5 | . 3 |
| Spinach | : | do. | 12.9 | 1.4 | . 1806 | . 5 | . 1 |
| Tomatoes Other | : | Other | 13.6 | 10.9 | 1.4824 | 4.1 | . 4 |
| Home garden output | : | BHNHB Other | 16.0 | 29.6 90.6 | 4.7360 | 12.9 | 1.5 |
| Total fresh | : |  | 13.4 | . 6 | $\frac{12.1404}{25.6812}$ | $\frac{33.2}{70.2}$ | 3.7 |
| Canned | : |  |  |  |  |  | 8.0 |
| Beans, snap | : | binhe | 16.2 | 2.8 | . 4536 | 1.2 | . 1 |
| Beets | : | do. | 13.5 | 1.1 | . 1485 | . 4 | $3 /$ |
| Corn | : | bab | 15.7 | 5.2 | . 8164 | 2.2 | .3 |
| Peas | : | do. | 12.2 | 5.6 | . 6832 | 1.9 | . 2 |
| Pickles, mixed | : | BENHE | 27.5 | 3.3 | . 9075 | 2.5 | . 3 |
| Spinach | : | do. | 15.3 | 1.1 | . 1683 | . 5 | . 1 |
| Tomatoes, whole | : | BAE | 14.5 | 4.3 | . 6235 | 1.7 | . 2 |
| Tomato catsup and chili sauce | : | BHKHEP | 25.7 | 2.5 | . 6425 | 1.7 | . 2 |
| Tomato peste, pulp, and puree | : | do. | 21.2 | 3.3 | . 6996 | 1.9 | . 2 |
| Vegetable Juices | : | do. | 9.6 | 4.1 | . 3936 | 1.1 | . 1 |
| Other | : | do. | 21.3 | 5.3 | 1.1289 | 3.1 | . 4 |
| Total canned Other processed products | : |  |  |  | 6.6656 | 18.2 | 2.1 |
| Other processed products Camed baby foods | ! |  |  |  |  |  |  |
| Frozen vegetables | : | BEmibib | 38.0 | 2.9 | 1.1020 | 2.8 | -3 |
| Canned soups | : | do. | 22.6 | 9.3 | 2.1018 | 5.8 | . 7 |
| Totel other processed | : |  |  |  | 4.2278 | 11.6 | 1.3 |
| Total vegetables | : |  |  |  | 36.5746 | 100.0 | 11.4 |
| Potatoes and sveetpotatoes | : |  |  |  |  |  |  |
| Potatoes | : | bas | 5.3 | 104.5 | 5.5385 | 82.8 | 1.7 |
| Sweetpotatoes | : | do. | 9.6 | 10.6 | 1.0176 | 15.2 | . 3 |
| Bome garden output | : | do. | 5.9 | 2.3 | . 1357 | 2.0 | . 1 |
| Total | : |  |  |  | 6.6918 | 100.0 | 2.1 |
| Beans, peas, and muts |  |  |  |  |  |  |  |
| Dry edible beans | : | Other | 28.9 | 6.6 | 1.9074 | 26.9 | . 6 |
| Dry field peas | : | do. | 23.1 | . 6 | . 1386 | 2.0 | 3/ |
| Peamrts | : | BHKPIS | 45.0 | 4.4 | 1.9800 | 28.0 | . 6 |
| Tree muts (including cocomut) | : | do. | 103.4 | 2.4 | 2.4816 | 35.1 | . 8 |
| Hore garden dry beans and peas | : | Other | 28.5 | 2.0 | . 5700 | 8.0 | . 2 |
| Total | - |  |  |  | 7.0776 | 100.0 | 2.2 |
| Cereal products |  |  |  |  |  |  |  |
| White and whole wheat plour | : | Other | 4/14.5 | 129 | 18.7050 | 79.4 | 5.8 |
| Semolina plour | : | BHIHE | 19.9 | 6.2 | 1.2338 | 5.2 | . 4 |
| Wheat cereal | : | do. | 23.0 | 3.1 | . 7130 | 3.0 | . 2 |
| Rye flour | : | Other | 18.5 | 1.4 | . 2590 | 1.1 | . 1 |
| Cormmeal | : | bas | 7.7 | 13.4 | 1.0318 | 4.4 | . 3 |
| Corn cereal | : | BHIHES | 24.5 | 1.5 | . 3675 | 1.6 | . 1 |
| Oatmeal and other oat food products | : | bas | 13.0 | 2.9 | . 3770 | 1.6 | . 1 |
| Rice | : | do. | 17.9 | 4.8 | . 8592 | 3.7 | . 3 |
| Total | : |  |  |  | 23.5463 | 100.0 | 7.3 |
| Sugars and sirups | - |  |  |  |  |  |  |
| Sugars (excluding duplication) 5/ | : | Other | 4/20.4 | 90.4 | 18.4416 | 92.1 | 5.7 |
| Sirups (excluding refiners' and honey) | : | BLS | 12.3 | 12.9 | 1.5867 | 7.9 | . 5 |
| Total | : |  |  |  | 20.0283 | 100.0 | 6.2 |
| Beverages | : |  |  |  |  |  |  |
| Coffee | : | BLS | 43.0 | 18.0 | 7.7400 | 84.3 | 2.4 |
| Tea | : | BLS | 124.0 | . 6 | .7440 | 8.1 | . 3 |
| Cocos | : | Other | 17.5 | 4.0 | . 7000 | 7.6 | . 2 |
| Total | : |  |  |  | 9.1840 | 100.0 | 2.9 |
| All foods in index | : |  |  |  | 321.4636 |  | 100.0 |
|  | : |  |  |  |  |  |  |

1/Value aggregates derived by mitiplying the 1947-49 average quantities for individual foods by the retail prices. For actual computations of the index, the value aggregates for the 3 years of the base period were averaged and used to achieve arithmetic accuracy. The differences are negligible for most purposes.

2/ BLS indicates average of retail prices reported by the Bureau of Labor Statistics. BAE indicates BLS average prices adjusted by the Bureau of Agyicultural Economics to include all grades of food item and to allow for sales in rural as well as urban areas. BEBBB indicates prices derived by BAE from the 1948 urban survey conducted by the Bureau of frame Futrition and Home Bconomics. Other - see text.

## 3/ Less than 0.05 percent.

4/ Price applies only to base period. See table 41 for prices for other years and text for description of nethodology used.
5/ Bxcludes augar used in frozen and canned fruits and juices, cannod vegetables, condensed milk, and ioe crean.
fluid cream were derived from the 1948 Urban Survey. These prices are all urban, whereas it is believed that much fluid cream is consumed in rural areas, and at lower prices. After consideration of available prices, a rough approximation of 40 cents was chosen for cream with 25-percent butterfat content.

The BAE average price series for American cheese was used for all whole and part-whole milk cheese and that for evaporated milk for condensed and evaporated, combined, because these commodities represent the major part of each item. The same source was used for prices of butter. No price series for ice cream was available. The prices derived from the 1948 Urban Survey and from BLS surveys in March 1947 and October 1949 were within a cent of each other so the Urban Survey price of 52.8 cents a pound was selected.

Skim-milk products were introduced into the index because of their growing importance. Information on retail prices of buttermilk, fluid skim milk, chocolate milk, nonfat dry milk solids, and cottage cheese is meager. Rough approximations were made on the basis of prices derived from the 1948 Urban Survey data and compared with the prices southern farmers received for skim milk, buttermilk, and cottage cheese. 8 /

Fats and Oils.- BAE prices were available for butter, margarine, and shortening. The average price of lard reported by BLS for 1947-49 was adjusted upward slightly to 27 cents because the prices paid by farmers for lard in those years averaged about 1 cent higher than the urban prices. The 1948 Urban Survey price per pound for salad and cooking oils was used for the whole category "other edible oils," which includes materials going into mayonnaise and salad dressings. Although large quantities of fats and oils are used in processed foods, the proportion of the total in the base period, perhaps 20 percent, did not appear to merit special handling to derive a weighted average price for the fats and oils purchased as such and those bought in processed forms, particularly in view of the lack of data for such adjustments.

Fruits.- The only fresh fruits for which BAE prices are available for 1947-49 are oranges and apples. Tangerines were combined with oranges. Grapefruit prices at retail were estimated by BAE for the whole country from late 1941 to mid-1947. The relationship of these prices to prices paid by farmers was used to derive the estimate of 7.3 cents a pound for 1947-49. A similar method was applied for lemons (with which limes were combined), using the relationship of data reported for 1935-39. The BIS retail price for bananas was used. Problems arising from seasonality of supplies and prices greatly complicate the estimation of annual average retail prices for fresh fruits. The

8/ Moser, Ada M., and others. Family Food Consumption in Three Types of Farming Areas of the South. Part II. An Analysis of Weekly Food Records, Late Winter and Early Spring, 1948, Appendix C. Clemson, S. C. Agricultural Experiment Station (Southern Cooperative Series Bulletin 20). November 1951.
auction prices of California table grapes and of fresh peaches at Chicago in 1947-49 were adjusted upward by the margins from auction to retail prices. For srapes this was derived from data in the figricultural Income Inquiry, Part II, p. $136 \mathrm{~g} /$, and for peaches the retail price was based on the prices paid in urban areas in 1936 as reported in the Consumer Purchases Study.10/ This l.ethod was checked by comparing the results for 1950 with retail prices reported in Baltinore. The 1948 Urban Survey price for pears checked reasonably well with Baltimore prices in the second half of 1949 when difference in supplies is taken into account so it was adopted for the base period. The price for fruits not handled separately was estimated as a simple average of the five noncitrus fruits - bananas, apples, grapes, peaches, and pears.

Although there is no series of reported retail prices on melons, scattered data on retail prices could be compared with season average prices received by farmers, as reported by BAE. For cantaloups, information on retail prices occurs in the Consumer Purchases Study for 1936, in the 1943 Urban Survey, and in a special survey by BLS for July 1949. A markup of 70 percent from farm to retail seemed reasonable on the basis of these data and when applied to farm prices for 1947-49 gave an average price of 7.3 cents per pound of cantaloup. The only retail prices found for watermelons were for New York City and Baltimore in 1950. Prices for melons in these cities are probably high in comparison with those in other parts of the country. But the relationship between watermelons and cantaloups in those cities was averaged to get the ratio of l:2.5. Applying this ratio to the cantaloup price estimated above, the price of watermelon was approximated at 3 cents a pound. Comparing this price with season average prices received by farmers for watermelons, the rarkup from farm to retail for watermelons appears to be a little more than 100 percent, whereas that for cantaloups was estimated at 70 percent.

Prices for canned fruits were selected as follows: BAE price for peaches, BLS price for pineapple, 1948 Urban Survey prices for pears, apples and applesauce, fruit salad and cocktail, and for other canned fruits except apricots. The average markup from wholesale to retail for canned peaches in 1947 to 1949 was applied to the wholesale price of apricots, f.o.b. California canners, to arrive at the price of 19 cents a pound.

The BLS reported retail prices for canned grapefruit juice for early 1947 and late 1949. These were compared with the average

9/ U. S. Federal Trade Commission. Agricultural Income Inquiry, Part II. - Fruits, Vegetables, and Grapes. 906 pp. 1937. 10/ Stiebeling, Hazel K., Monroe, Day, Coons, Callie M., Phipard, Esther F., and Clark, Faith. Family Food Consumption and Dietary Levels. Five Regions. (Consumer Purchases Study - Urban and Village Series). U. S. Dept. Agr: Misc. Pub. 452, 268 pp. illus. 1941.
price of canned grapefruit juice exported in those years, indicating a 60 -percent markup from export price to retail. This relationship yielded a retail price of 8.8 cents a pound, for 1947-49. For canned orange juice, the markup from 1949 f. O.b. prices, quoted in trade papers, to the retail prices of the BIS special survey was applied to average f.o.b. prices for 1947-49. A rough approximation of ll cents, between the prices for orange and grapefruit juices, was selected for blended orange-grapefruit juice. The 1948 Urban Survey data for pineapple and other juices combined indicated that their prices ran about 75 percent above those of grapefruit so this markup was adopted for the 1947-49 average.

The pricing of frozen concentrated fruit juices presented a serious conceptual problem. In 1947-49 the concentrates were new products and were overpriced compared with prices in 1951 and 1952. For purposes of construction of this index, a price more representative of relationships to be expected in coming years was desirable. Therefore, the ratio of the price of frozen orange juice per pound in 1951 to the BLS price of fresh oranges per pound was applied to the latter series for 1947-49, giving a projected price for frozen orange juice of 54.4 cents, used for all concentrated juices. The average price of frozen fruits was taken from the 1948 Urban Survey.

The Bureau of Agricultural Economics has data on retail prices of dried prunes only. For raisins, the ratio of wholesale prices of raisins to wholesale prices of prunes, times the average retail price for prunes in 1947-49 gave 19.4 cents; which checked well with a BIS survey made in 1949. After consideration of the relationships between f.o.b. and import prices to retail prices for other dried fruits reported in the 1948 Urban Survey and by the Market Research Corporation of America for 1950, a price of 30 cents a pound was chosen.

Vegetables.- BAE prices were developed for fresh cabbage, onions, lettuce, carrots, snap beans, and spinach for 1947-49. Prices of fresh tomatoes were not reported during this base period. They are probably highly seasonal. Accordingly, it is reasonable to tie the estimation of average retail prices to season average prices received by farmers. This was done by deriving the relationships between retail prices of tomatoes reported in several surveys of urban food purchases and season average prices received by farmers in those periods. These relationships were quite consistent at about 2.6:1. This ratio was applied to the base-period farm prices. Rural prices for this period were inadequate so the resulting urban price was lowered 10 percent to arrive at an approximation of 13.6 cents for the average $U$. S. price of tomatoes. The 1948 spring Urban Survey price for celery checked well with average farm prices for the period so it was used. The prices of fresh corn derived from the 3-season, 4-city data of the 1948 Urban Survey and the BIS sample survey for August 1949 were identical at 6.3 cents. The simple average of prices per pound of the eight vegetables listed in the 1948 Urban Survey not covered above was used for "other vegetables," assuming that lower rural prices offset higher prices at other times of the year.

The two principal sources of retail prices were used for canned vegetables: BAE prices for peas, corn, and whole tomatoes; 1943 Urban Survey prices for snap beans, spinach, tomato products, beets, mixed pickles, tomato juice (for all vegetable juices), for other canned vegetables (simple average of prices for asparagus, lima beans, and "other canned vegetables") and for canned soups. The BLS made a l2-city survey of the retail prices of canned baby foods in April 1949, indicating an average of 32 cents a pound.

The 1948 Urban Survey supplied the only retail price information available for frozen vegetables, 38 cents.

Potatoes and Sweetpotatoes. - The only problem in the choice of retail prices for potatoes and sweetpotatoes was that of inclusion of the canned products. All the consumption of these two foods was priced at the BAE price for the fresh product.

Beans, Peas, and Nuts.- A substantial proportion (perhaps one-third of beans and more than two-thirds of the peas) of dry beans and peas is bought in processed form. To give this fact due consideration, a weighted average price was developed for dry beans - one-third at the price of equivalent bean content of canned baked beans reported in the 1948 Urban Survey and two-thirds at the BAE price for navy beans in 1947-49. Retail prices of dry peas in either processed or product form are not available so the relationship of wholesale prices of dry peas to prices of dry beans ( 80 percent) was applied to the weighted average retail price of dry beans. Similarly, the 1948 Urban Survey prices of peanut butter and shelled peanuts were combined (half and half) to arrive at the retail price for peanuts. The 1948 Urban Survey price for nuts other than peanuts was $\$ 1.034$ a pound (shelled basis).

Cereal Products.- The procedure used in developing price weights for wheat flour (and for sugar) for the revision of this index differed significantly from that previously used. Adequate data are not available for estimating annual per capita consumption of family flour and of flour in the wide variety of baked goods. But the retail price of flour in processed foods is much higher and should be taken into account for consistency of treatment with dairy products, fruits, and vegetables. As an approximation, the BAE retail price of flour, as such, in 1947-49 was combined with an estimated price of flour in processed form developed from production data in the 1947 Census of Nianufactures, BAE prices of bread and crackers, and 1948 Urban Survey prices of cookies and other bakery products, as follows: The quantities of the individual products made from flour were multiplied by pertinent 1947 BAE prices and 1948 Urban Survey prices and added together to derive an estimated total retail value of the products. The proportion of this value that could be considered as the value of flour in processed form was derived from the ratio of cost of flour to cost of all ingredients, also based on the census. The estimated total retail value of flour alone was divided by flour content of the products (again based on Census of Manufactures) to obtain the price per pound, 18.5 cents. Because the proportion of flour bought in processed forms has changed so much in the last 40 years; the various censuses were used to derive
benchmarks for the flour so used. These were compared with domestic consumption of flour and these proportions were used to combine the price of flour as such, and of flour in processed forms. The proportions of flour consumed in processed products and the weighted prices are given in table 41.

Table 41.-Approximate proportions of flour and sugar consumed in processed products and weighted average prices

| Flour |  |  | Sugar |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: |
| Period | :Proportion : Weighted <br> : products : price |  | : Period | :Proportion <br> :consumed <br> : products | Weighted price |
|  | : Percent | Cents |  | : Percent | Cents |
| 1909-19 | 25 | 10.9 | :1909-23 | 15 | 14.3 |
| 1920-24 | 30 | 11.4 | :1924-34 | 20 | 15.8 |
| 1925-29 | 35 | 11.9 | :1935-39 | 25 | 17.4 |
| 1930-39 | 40 | 12.4 | :1940-45 | 30 | 18.9 |
| 1940-42 | 45 | 12.9 | :1946 to date | 35 | 20.4 |
| 1943-46 | 55 | 14.0 |  | : |  |
| 1946 to date | : 60 | 14.5 | : | : |  |
|  | : |  | : | : |  |

The 1948 Urban Survey price was used for macaroni and spaghetti and that for uncooked cereals for wheat cereals. Most rye flour is processed into bread and rolls. The price of rye bread was not collected by BIS after July 1947 so it was necessary to assume that the average price of rye bread in 1947-49 bore the sane relationship to July 1947 prices as did the average price of white bread. An estimate of the proportion of cost of ingredients for rye bread represented by rye flour was developed. The retail value of rye flour in bread was divided by rye flour content to get the approximate retail price of rye flour, 18.4 cents.

The BAE price was used for cornmeal, oatmeal, and rice and the 1948 Urban Survey price of cornflakes for corn cereal.

Sugars and Sirups. - The price of sugar other than that contained in canned and frozen fruits and juices, canned vegetables, salad dressings, and condensed milk, was estimated according to the same procedure as that for wheat flour. Prices for refined sugar (BAE-cane, 9.8 cents) and for sugar in processed foods ( 40.0 cents) were combined to obtain changing price weights. (See table 41 above.)

Most of the sirup consumed is corn sirup, but the BLS did not price corn sirup after June 1947. Fortunately, however, the June 1947 price probably was close to the average price for 1947-49, judging from wholesale price data.

Beverages.- The BIS price of roasted coffee was adjusted to a green-bean basis to match the consumption data. Although much of the cocoa is consumed in candy, the lack of information on candy content and on prices necessitated reliance on prices for cocoa powder. The
wholesale price of cocoa in 1947-49 was increased 20 percent, using the markup estimated from earlier data of BLS, and adjusted to a cocoa-bean basis. The only usable information on retail prices of tea was the average price of $\$ 1.24$ a pound from an April 1949 survey in 12 cities by BLS.

## Relative Importance of Food Groups in the Index

The importance of individual food groups in the index is shown for selected years in table 42. The shifts among food groups arise principally from changes in the rates of per capita consumption for each group as a whole compared with others. To a lesser degree, however, a food group might increase absolutely (that is, might have a larger value aggregate) because of a shift from purchase of a food in unprocessed form to purchases of processed items, as in the case of flour. However, the shift from fresh to processed does not necessarily increase the retail value of food consumed because marketing costs for the fresh product may be greater than processing costs for the processed items, as in the case of fluid and evaporated milk.

## Use of the Index of Per Capita Food Consumption and Other Related Measures

The index of per capita food consumption is regarded as the best available measure of changes in overall consumption of food at the retail level. It reflects the quantitative aspects of changes in consumer demand, but excludes the effects of demand on prices. However, as mentioned previously, it does incorporate shifts from lower priced to higher priced foods. The higher prices for some foods result from higher costs of farm production, marketing, or processing, or of the three together. Changes in marketing costs because more food is bought in urban than in rural areas or because of increased purchases of food as meals rather than as food from retail stores are not included as all food was priced with the same retail-store prices throughout. Moreover, changes in quality or shifts between price lines of particular foods are not covered. Accordingly, the index of per capita food consumption cannot be used directly with the BIS retail price index to derive an index of food expenditures comparable to the Department of Commerce food-expenditure estimates.

Because this index is constructed from estimates of per capita consumption of individual foods in the forms in which they are sold at the retail level, using retail prices as weights, it does not measure changes in utilization of farm food products as well as would an index constructed in terms of per capita quantities in farm weights combined by means of farm prices in the base period. The equivalent of the latter index has been constructed from the value aggregates of civilian utilization derived in the calculation of the index of supply-utilization. This index is given in table 43.

An index of consumption in terms of actual pounds is useful for some purposes so an index on a strictly physical weight basis has already been constructed and presented in table 38. The breakdown of

Table 42.- Relative importance of major food groups in the index of per capita food consumption in selected years

| Commodity | $:^{1909-13}$ | :1925-29 | :1935-39 | :1942-45 | :1947-49 | :1952 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | : |  |  |  |  |  |
|  | : Percent | Percent | Percent | Percent | Percent | Fercent |
| Total food | : 100.0 | 100.0 | 100.0 | 100.0 | 100.0 | 100.0 |
| Meats, fish, poultry - total | : 34.3 | 30.8 | 29.5 | 31.8 | 31.3 | 32.0 |
| Meats | : 27.4 | 24.0 | 22.8 | 24.4 | 24.1 | 23.4 |
| Fish | : 2.9 | 2.9 | 2.8 | 2.0 | 2.3 | 2.5 |
| Poultry | : 4.0 | 3.9 | 3.9 | 5.4 | 4.9 | 6.1 |
| Eggs | : 5.6 | 5.9 | 5.3 | 5.7 | 6.3 | 6.8 |
| Dairy products | : |  |  |  |  |  |
| Including tutter | : 18.3 | 19.5 | 19.7 | 19.3 | 19.0 | 18.3 |
| Excluding butter | : 13.6 | 14.8 | 15.2 | 16.3 | 16.5 | 16.2 |
| Fats and oils | : |  |  |  |  |  |
| Including butter | 7.4 | 8.3 | 8.6 | 6.7 | 6.5 | 6.6 |
| Excluding butter | 2.7 | 3.6 | 4.1 | 3.7 | 4.0 | 4.5 |
| Fruits - total | 6.8 | 7.3 | 7.7 | 6.6 | 7.3 | 7.2 |
| Fresh, including melons | : 6.8 | 6.0 | 6.0 | 4.6 | 4.9 | $\frac{7.2}{4.3}$ |
| Canned fruits | : $\quad .2$ | . 8 | . 9 | . 8 | 1.1 | 1.1 |
| Canned juices | : 2/ | $2 /$ | . 2 | . 3 | . 6 | . 6 |
| Frozen | 4 | $2 / 5$ | . 1 | . 2 | . 4 | . 9 |
| Dried | . 4 | . 5 | . 5 | . 4 | . 3 | . 3 |
| Vegetaties - total | 9.4 | 10.1 | 11.1 | 12.1 | 11.4 | 11.3 |
| Fresh Canned | 8.3 | 8.4 | 8.9 | $\frac{12.1}{9.3}$ | $\frac{11.4}{8.0}$ | $\frac{11.3}{7.4}$ |
| Other processed products 3/ | 1.0 | 1.4 | 1.7 | 2.0 | 2.1 | 2.2 |
|  | -1 | - | - 5 | - 8 | 1.3 | 1.7 |
| Potatoes and sweetpotatoes | 4.0 | 3.1 | 2.8 | 2.5 | 2.1 | 1.8 |
| Dry beans, peas, nuts | 2.0 | 2.2 | 2.5 | 2.4 | 2.2 | , |
| Cereal products | 10.7 | 9.3 |  |  | 2.2 | 2.2 |
|  | 10.7 | 9.3 | 8.5 | 8.3 | 7.3 | 7.0 |
| Sugars and simups | 4.3 | 6.0 | 6.2 | 5.3 | 6.2 | 6.3 |
| Beverages | 1.9 | 2.2 | 2.6 |  |  | 6.3 |
|  | 1.9 | 2.2 | 2.6 | 2.3 | 2.9 | 2.6 |

1/ Preliminary.
2/ Less than 0.05 percent.
3/ Includes frozen vegetables, canned soups, and canned baby food.

Table 43.- Per capita utilization of farm producte for food, 1924-52 1/

| Year | $\begin{aligned} & : \text { Index : } \\ & : 1947-49=100: \\ & \hline \end{aligned}$ |  |  | Year | $\begin{aligned} & : \text { Index } \quad: \\ & : 1947-49=100: \end{aligned}$ |  |  | Year | $\begin{aligned} & \text { Index } \\ & : 1947-49=100 \end{aligned}$ |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | : |  | : |  | : |  | : : |  | : |  |
| 1924 | : | 93 | : | 1935 | : | 87 | : | 1946 | : | 105 |
| 1925 | : | 93 | : | 1936 | : | 90 | : | 1947 | : | 103 |
| 1926 | : | 93 | : : | 1937 | : | 91 | : : | 1948 | : | 99 |
| 1927 | : | 91 | : : | 1938 |  | 89 | : | 1949 | : | 98 |
| 1928 | : | 91 | : : | 1939 | : | 93 | : : | 1950 | : | 99 |
| 1929 | : | 92 | : : | 1940 | : | 95 | : : | 1951 | : | 98 |
| 1930 | : | 91 | : | 1941 | : | 97 | : : | 1952 2/ | : | 100 |
| 1931 | : | 91 | : | 1942 | : | 96 | : |  | : |  |
| 1932 | : | 89 | : | 1943 | - | 99 | : |  | : |  |
| 1933 | : | 89 | : | 1944 |  | 103 | : |  | : |  |
| 1934 | : | 90 | : | 1945 |  | 103 | : |  | : |  |
|  | : |  | : : |  | : |  | : |  | : |  |

1/ Index derived from civilian food disappearance column in table 2, adjusted by index of population eating out of civilian supplies.

2/ Preliminary.
the total poundage in table 38 is given according to categories commonly used by food specialists. Study of the poundage totals reveals that the shift from bulkier foods such as potatoes and cereal products was more than offset by increases in such foods as fruit juices and other fresh fruits and vegetables, which have high water content.

Another useful index of food consumption would be one with weights assigned to individual foods according to their nutritional importance, but no satisfactory basis has yet been found for combining nutrients.

The price-weighted index of per capita food consumption is reported currently in table 1 of The National Food Situation. It is reworked four times each year. The subindexes are to be published each year in the supplement to this handbook which will appear in The National Food Situation, as will the derived index of per capita utilization of farm food products and the index of retail weight of food consumed.

CHAPTER 4. ESTIMATIIG THE NUTRITIVE VALUE OF THE UNITED STATES PER CAPITA FOOD SUPPLY 1/

The chief purpose of estimating the nutritive value of the per capita food supply of the country is to ascertain trends in supplies of various nutrients and, when significant changes occur, to learn the causes.

In some instances, trends in supplies of certain nutrients are directly related to consumption of specific foods. For example, year by year, the quantity of calcium available in the per capita food supply follows closely the supply of milk. Also, quantities of vitamin A and ascorbic acid are closely related to the supply of specific fruits and vegetables. But some of the other nutrients are more widely distributed in foods, so trends in the supplies of these are usually the result of net changes in consumption of many foods.

Estimates of the nutrient content of the food supply tend to be higher than those based on studies of food actually consumed. These higher values may be due to several factors. For example, they may be partly due to waste of food between the retail level of distribution and actual intake. This would include such waste as spoilage because of improper storage, plate waste, and losses of nutrients during cooking.

Also influencing these estimates of the nutrient content are the food composition values used. Except for a few foods, the composition values were from Agriculture Handbook 8, Composition of Foods - Raw, Processed, Prepared. So far as data were available, these represent the nutrients in foods obtained the year around and throughout the country. They are for foods "as purchased" and allow for refuse, such as bones, rinds, and peelings which are usually discarded when food is being prepared. They assume products in good condition with an average amount of refuse. They do not allow, for example, for losses in fruits and vegetables due to excessive peeling and trimming or to bruises and rot. Neither do they take into account losses in nutrients that occur in home storage or during cooking.

Influencing these data is the possibility of error in the basic food supply estimates as described in preceding chapters. For example, the accuracy of estimates of individual commodities varies widely. In some instances, information on production is still relatively unsatisfactory. In others, it is difficult to arrive at the distribution of an agricultural product between human food and nonfood uses. Although the extent of errors of this type may be small for individual foods, there is no way of knowing whether they cumulate or balance each other when translated into terms of quantities of nutrients per capita per day.

I/ Prepared by Rosalind C. Lifquist, Berta Friend, and Ennis C. Blake, Bureau of Human Nutrition and Home Economics, in consultation with Bernice K. Watt.

If these data are compared with nutritional goals for nutrients ingested, still another factor should be considered. The data are averages. Therefore, they do not show distribution, and dietary studies have shown that food is unevenly distributed anong individuals. This uneven distribution, tosether with the factors discussed earlier, indicates that, in any appraisal of the adequacy of the food supply, quantities of nutrients computed from this base should be generous in relation to goals for nutrients ingested.

These same factors, and especially waste, should be considered when estimates of the nutritive value of our food supply are compared with those of other countries. People in some countries consume practically all the food available. This makes any estinates of the nutritive value of their food supply much closer to nutrients ingested than is true of ours.

## PROCEDURE USED

Unless otherwise indicated, the method used in this study to calculate the nutritive value of the per capita food supply was to multiply the pounds of each separate food by its nutritive value per pound "as purchased." $2 /$ The resulting values for eadh nutrient were added to obtain a yearly total. These totals were divided by 365 to arrive at the nutritive values per capita per day given in table 44. Table 45 contains indexes based on these quantities. Quantities of individual foods used in estimating the nutrient content of the food supply are listed and described in chapter 3. Table 38 on pase 144 summarizes the quantities by food groups.

## Adjustments in Data

Current estimates of consumption include data on approximately 200 different foods. For the earlier years of the series, however, detailed data for this number of individual foods were not available, as in some instances, estimates were given only as totals for groups of similar foods. Because even similar foods often vary greatly in the proportions of the particular nutrients they contain, it was necessary for those earlier years to approximate roughly the quantities of individual foods comprising these group totals. In most instances, these approximations applied to foods that represented only a small percentage of all food.

## Dairy Products (Excluding Butter)

Except for ice cream, all per capita estimates of consumption of dairy products were made in terms of quantities of individual foods. Estimates of consumption of ice cream were available, but, from jear

[^12]Table 44.- Nutrients available for consumption per capita per day, 1909-52 1/


1/ Quantities of mutrients computed by the Bureau of Human Nutrition and Home Economics on the basis of estimates of apparent per capita consumption (retail basis), including estimates of produce of rural and urban home gardens, prepared by the Bureau of Agricultural Economics. No deduction has been made in nutrient estimates for loss or waste of food in the home or for destruction or loss of mutrients during the preparation of food. Civilian per capita only, 1941 to date.

2/ Beginning 1941, data for iron, thiamine, riboflavin, and niacin include estimates of the quantities of these mutrients added to prepared cereals, white flour, and bread.

3/ For level of fortification of margarine with vitamin A see table 46.
4/ Preliminary.

Table 45.- Nutrients available for consumption per capita per day, 1909-52 1/
(Index numbers: $1947-49=100$ )

| Year | : | $\begin{aligned} & \text { Food } \\ & \text { nere } \end{aligned}$ | rotein | Fat |  | cium | Iron | $\begin{aligned} & \text { :Vitamin: } \\ & \vdots \quad A \\ & : \text { value } \end{aligned}$ | Thia <br> mine | $\begin{aligned} & \text { Rive } \\ & \text { fla } \end{aligned}$ | iacin |  | $\begin{aligned} & \text { Ascor- } \\ & \text { bic } \\ & \text { acid } \end{aligned}$ |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1909 | : | 109 | 110 | 90 | 123 | 83 | 90 | 84 | 88 | 82 | 93 | 100 | 88 |
| 1910 | : | 108 | 107 | 88 | 123 | 82 | 89 | 84 | 86 | 80 | 91 | 98 | 88 |
| 1911 | : | 108 | 106 | 90 | 121 | 79 | 88 | 82 | 85 | 79 | 89 | 96 | 83 |
| 1912 | : | 107 | 107 | 88 | 121 | 85 | 89 | 83 | 87 | 83 | 90 | 98 | 87 |
| 1913 | : | 107 | 105 | 89 | 121 | 83 | 87 | 81 | 85 | 81 | 89 | 95 | 85 |
| 1914 | : | 107 | 103 | 90 | 119 | 82 | 85 | 81 | 83 | 79 | 86 | 93 | 84 |
| 1915 | : | 106 | 102 | 90 | 119 | 81 | 85 | 84 | 84 | 79 | 87 | 94 | 88 |
| 1916 | : | 105 | 101 | 89 | 116 | 80 | 84 | 82 | 83 | 78 | 85 | 92 | 81 |
| 1917 | : | 103 | 101 | 86 | 116 | 82 | 87 | 86 | 82 | 79 | 86 | 96 | 83 |
| 1918 | : | 104 | 102 | 91 | 115 | 86 | 91 | 86 | 84 | 82 | 87 | 97 | 85 |
| 1919 | : | 106 | 102 | 91 | 118 | 84 | 90 | 89 | 82 | 80 | 88 | 95 | 85 |
| 1920 | : | 102 | 99 | 87 | 113 | 85 | 87 | 89 | 81 | 80 | 83 | 93 | 88 |
| 1921 | : | 99 | 96 | 87 | 109 | 84 | 83 | 89 | 79 | 79 | 81 | 90 | 88 |
| 1922 | : | 106 | 99 | 91 | 119 | 85 | 86 | 94 | 81 | 80 | 84 | 94 | 89 |
| 1923 | : | 107 | 101 | 96 | 116 | 84 | 88 | 92 | 85 | 81 | 88 | 98 | 93 |
| 1924 | : | 107 | 101 | 96 | 117 | 85 | 87 | 87 | 85 | 82 | 86 | 99 | 93 |
| 1925 | : | 107 | 100 | 95 | 117 | 85 | 85 | 87 | 81 | 81 | 85 | 98 | 91 |
| 1926 | : | 107 | 100 | 95 | 118 | 86 | 85 | 93 | 81 | 81 | 84 | 99 | 90 |
| 1927 | : | 107 | 100 | 95 | 118 | 86 | 85 | 95 | 82 | 81 | 84 | 101 | 91 |
| 1928 | : | 108 | 99 | 96 | 119 | 86 | 84 | 92 | 83 | 81 | 84 | 100 | 90 |
| 1929 | : | 107 | 99 | 97 | 117 | 88 | 85 | 96 | 84 | 82 | 84 | 102 | 97 |
| 1930 | : | 107 | 98 | 96 | 117 | 87 | 83 | 94 | 82 | 81 | 82 | 101 | 89 |
| 1931 | : | 105 | 97 | 96 | 114 | 87 | 83 | 95 | 83 | 82 | 83 | 102 | 95 |
| 1932 | : | 103 | 96 | 94 | 111 | 87 | 82 | 99 | 81 | 80 | 82 | 98 | 93 |
| 1933 | : | 102 | 96 | 94 | 109 | 87 | 82 | 95 | 79 | 80 | 81 | 95 | 92 |
| 1934 | : | 101 | 96 | 94 | 107 | 87 | 84 | 98 | 78 | 80 | 83 | 98 | 94 |
| 1935 | : | 99 | 93 | 89 | 109 | 88 | 83 | 99 | 74 | 79 | 79 | 98 | 98 |
| 1936 | : | 102 | 97 | 94 | 109 | 90 | 85 | 95 | 76 | 80 | 83 | 100 | 95 |
| 1937 | : | 100 | 95 | 94 | 107 | 90 | 83 | 99 | 75 | 81 | 81 | 98 | 95 |
| 1938 | : | 101 | 96 | 94 | 107 | 91 | 83 | 99 | 77 | 81 | 81 | 100 | 98 |
| 1939 | : | 104 | 97 | 99 | 110 | 92 | 85 | 101 | 79 | 82 | 83 | 102 | 102 |
| 1940 | : | 103 | 98 | 101 | 106 | 93 | 86 | 99 | 82 | 84 | 85 | 102 | 101 |
| 1941 | : | 105 | 100 | 101 | 110 | 94 | 88 | 101 | 87 | 85 | 87 | 104 | 102 |
| 1942 | : | 103 | 102 | 99 | 107 | 99 | 94 | 105 | 97 | 89 | 91 | 111 | 103 |
| 1943 |  | 104 | 105 | 101 | 106 | 100 | 98 | 108 | 108 | 94 | 97 | 111 | 102 |
| 1944 | : | 104 | 105 | 101 | 106 | 101 | 106 | 112 | 111 | 104 | 109 | 113 | 112 |
| 1945 | : | 102 | 109 | 99 | 104 | 107 | 109 | 116 | 109 | 108 | 110 | 114 | 112 |
| 1946 | : | 103 | 109 | 102 | 102 | 109 | 109 | 111 | 114 | 108 | 110 | 111 | 109 |
| 1947 | : | 101 | 102 | 101 | 101 | 103 | 102 | 102 | 102 | 102 | 103 | 102 | 105 |
| 1948 | : | 99 | 100 | 99 | 99 | 99 | 98 | 99 | 99 | 99 | 98 |  | 99 |
| 1949 | : | 99 | 100 | 99 | 99 | 99 | 98 | 98 | 99 | 99 | 99 | 98 |  |
| 1950 | : | 101 | 101 | 103 | 99 | 100 | 99 | 99 | 100 | 99 | 100 | 101 | 93 |
| 1951 | ? | 99 | 100 | 100 | 99 | 100 | 98 | 93 | 101 | 99 | 99 | 98 | 94 |
| 1952 | : | 100 | 102 | 104 | 98 | 101 | 99 | 94 | 101 | 100 | 101 | 100 | 94 |

[^13]to year, the fat content was so variable that BAE data giving the quantity of ice cream in terms of milk and cream equivalents were used for this analysis. The butterfat content of cream also varied considerably from year to year throughout the series. Therefore, for the nutritive analysis, the BAE converted the yearly estimates for cream to a 25 -percent butterfat basis.

From a nutritional viewpoint, it is frequently desirable to consider the dietary contribution and consumption of dairy products as a group. For this purpose factors based on the protein and mineral content were developed for converting various dairy products to fluid whole milk equivalent. Below are given the milk-equivalent factors used in this study for converting pounds of dairy products to pounds of fluid milk equivalent.

## Dairy product

| Cheese, cottage <br> Cheese, other . |
| :---: |
|  |  |

Milk, condensed ...................................
Milk, evaporated .................................
Dry whole milk
Nonfat dry milk solids (dry skim) ........
Condensed, skim
Pounds of fluid whole milk equivalent
to $l$ pound of product


These factors have shortcomings, as they do not represent all nutrients equally well. When losses of nutrients during manufacturing are small, milk-equivalent factors pose no special problem. But in processing, several dairy products lose a portion of certain nutrients while others have ingredients added which change markedly the proportions of various nutrients in the resulting products from those of fluid whole milk. Fortunately, per capita consumption is relatively small for the products for which the conversion lactors are least satisfactory (cottage cheese, for example), hence the degree of error introduced in this way is considered insignificant.

Total pounds, per capita, of dairy products (except butter) stated in terms of quarts of fluid whole milk equivalents are shown in table 38. These were derived by applying the factors given above to the quantities of individual products. The resulting pounds of milk equivalent were totaled, then divided by 2.15 (weight in pounds of 1 quart of fluid milk) to obtain milk equivalent quarts (mineral and protein basis).

Supplies of meat from different kinds of animals were estinated in pounds of carcass trimmed for retail distribution. But the proportion of lean to fat varies greatly from year to year and even from season to season. As reliable estimates of these fluctuations could not be made, nutritive values were chosen that appeared most representative of the average trimmed carcass. The values used are those in Agriculture Handbook 3, table 2 3/for items described as follows:

Beef: Medium fat carcass, trimmed to retail
Lamb: Shoulder roast (wholesale 3-rib)
Pork: Miscellaneous lean cuts
Veal: Carcass or side, excluding kidney fat: mediuru fat

Edible offal include such items as liver, tripe, brains, and tongue. To estimate the nutrients contributed by these foods, the nutritive values per pound of offal from different meat animals (beef, pork, lamb, and veal) were weighted by the percentage of each kind in the estimates of the 1950 meat supply. These average values were used for the entire series.

## Fats and Oils

In computing nutrients contributed by the fats and oils group, two problems had to be considered, (1) the nutritive values assigned to "fat cuts," and (2) the degree of fortification of margarine with vitamin A.

For all years of the series, estimates for bacon and salt pork were given only in terms of total fat cuts. As bacon and salt pork differ considerably in nutritive value, an approximation had to be made of the proportion of each in these estimates. Trade data indicated that these products were available in the proportion of about three parts of bacon to one part of salt pork. Using this rate, weighted nutritive values per pound of fat cuts were developed. These were used for the entire series.

No fortification was assumed for margarine before 1937. The proportion and the level of fortification assumed for 1938-52 are given in table 46.

Table 46. - Estimated proportion of margarine fortified with vitamin $A$ and level of fortification used in estimating the nutritive value of the national food supply

| Year | $:$ | Proportion <br> fortified | $:$ Level of fortification <br> per pound |
| :---: | :---: | :---: | :---: |
|  | $:$ | $\frac{\text { Percent }}{}$ | International Units |
| 1938 | $:$ | 65 | 9,000 |
| 1939 | $:$ | 70 | 9,000 |
| 1940 | $:$ | 75 | 9,000 |
| 1941 | $:$ | 80 | 9,000 |
| 1942 | $:$ | 85 | 9,000 |
| 1943 | $:$ | 95 | 9,000 |
| 1944 | $:$ | 100 | 9,000 |
| 1945 | $:$ | 100 | 9,000 |
|  | $:$ |  | 9,000 |
| 1946 | $:$ | 10 | 15,000 |
|  | $:$ | 90 | 9,000 |
| 1947 | $:$ | 5 | 15,000 |
|  | $:$ | 95 | 9,000 |
| 1948 | $:$ | 1 | 15,000 |
|  | $:$ | 99 | 15,000 |

## Fruits and Vegetables

Except for watermelons and cantaloups, estimates of per capita consumption rates for individual fruits were available for the entire series. Prior to l919, totals only were given for melons.

Starting in 1919, estimates were given for individual vegetables. Before that time, however, estimates were available for all vegetables except for fresh leafy, green, and yellow vegetables and for fresh "other vegetables." For these two classifications, totals only were given. Therefore, for years prior to 1919, it was necessa.y to assume proportions of the individual foods within these categories. Using a 5-year average, 1919-23, the relative quantity of each vegetable was calculated. These percentages were used to estimate the distribution of vegetables for 1909-18.

The same procedure was used to estimate the quantities of watermelons and cantaloups available before 1919.

The so-called "miscellaneous" vegetables consist of minor items which are only quantitatively significant in certain seasons or in particular regions. Included are such vegetables as collards, Chinese cabbage, parsnips, turnips, and rutabagas. The only information as to supplies of individual vegetables is from carload reports for the major cities of the United States. Based on these data, the relative
distribution of individual vegetables within each of these groups was used as the basis for deriving weighted nutritive values per pound for "miscellaneous leafy, green, and yellow vegetables," and for "miscellaneous other vegetables." These weighted values were used for all years.

## Cereal Products

For most foods in this group, nutritive values for individual foods were used. But for a few foods, composite values seemed more representative of the products for which estinates were given. Nutritive values used for "wheat cereals" assumed the use of 50 percent of the farina type and 50 percent of the shredded type of cereal. Cornmeal was assumed to be equal parts of white, whole ground, and yellow degerminated meal. These composite values were used throughout the series.

During 1946, about 17 percent of all white flour was assumed to be milled using 80 -percent-extraction rate.

Data on supplies of self-rising and phosphated flour were available for only 2 years of this series, so that the calcium contributed by these flours could not be evaluated year by year.

A major problem encountered in estimating the nutrients contributed by grain products was learning the extent to which the various products were enriched during the later years. The methods used in deriving the levels of enrichment assumed in this study are described in the following paragraphs.

Enrichment of White Flour. - No enrichment of white flour was assumed before 1941. For 1941-45, estimates were made of the proportion of flour used in white bread and rolls and this rate was assuned to be enriched to the minimum levels promulgated by the U. S. Food and Drug Administration, which were published in the Federal Register Por May 27, 1941, and July 3, 1943. After the expiration of War Food Order No. 1, it could not be assumed that enrichment was continuing at the previous rate and a different procedure for estimating it was used. Data on the extent of enrichment was almost nonexistent, so during the fall of 1948 and the spring of 1950 the Bureaus of Agricultural Economics, Human Nutrition and Home Economics, and the Census cooperated in collecting information from the firms who manufactured or sold, or both, about 95 percent of the enrichment mixes and wafers used to enrich bread 4/. These data, combined with information on supply and utilization of flour, indicated that for 1947-50 about 65 percent of the
4) See Cereal Food Enrichment in the United States, 1946-48. The National Food Situation, July-September 1949 and Review of Cereal Food Enrichment in the United States, 1948 to 1950. The National Food Situation, October-December 1950.
civilian flour and bread was enriched. This rate of enrichment at the minimum levels published in the Federal Register for July 3, 1943, was used for all years from 1946 to 1952.

The percentage of total white flour (exclusive of semolina and durum) estimated to have been enriched each year since 1940 and the level of enrichment that was assuned are given below:

| Year | Percent enrichment | Level of enrichment |
| :---: | :---: | :---: |
| 1941 ......... | 20 | Minimum levels, Federal Register, May 27, 1941 |
| 1942 ......... | 50 | As in 1941 |
| 1943 ........ | $\begin{aligned} & 50 \\ & 15 \end{aligned}$ | As in 1941 <br> Minimurn levels, Federal Register, July 3, 1943 |
| 1944-52 ...... | 65 | Minimum levels, Federal Register, July 3, 1943 |

It is known that some millers and bakers enriched their products to higher levels than those given above. As the extent of this practice could not be ascertained, only minimum levels of enrichment were assumed.

Enrichment of Wheat and Corn Cereals and Cornmeal.- No enrichment was assumed for wheat or corn cereals before 1939, although there may have been some during the latter part of the period. Based on the best trade data available for 1939-41, half of the farina-type wheat cereal and half of the corn cereal was assumed to be enriched to the values given in Agriculture Handbook 8. From 1942 to 1945, all of the farina-type cereal and all of the corn cereals were assumed to be enriched.

For 1946-52, the effect of the enrichment of cereals was estimated in a different way. For this period, yearly estimates of the total quantity of each nutrient were derived from a special survey made in 1950 among manufacturers and distributors of the premixes used for cereal products 5/.

## Sugars and Sirups

Both the nutritive values and the poundage data for canned and frozen fruits and vegetables, condensed milk, and frozen dairy products other than ice cream include the sugar and other sweetening agents added in their manufacture. As described in chapter 3, the consumption
estimates for sugars and sirups were reduced by the estimated amounts contained in such products. Therefore, the nutrient data for this food group do not represent the total carbohydrates contributed by all sugar and sirup consumed.

## Miscellaneous Foods

Cocoa was the only food in this group for which nutrient content was computed. As estimates of annual consumption were not available for other foods in this classification, such as yeast, mold inhibitors, and baking powder, no account was taken of the nutrients such as calcium and thiamine which they provide.

CONTRIBUTIONS OF FOOD GROUPS TO THE TOTAL SUPPLIES OF INUTRIENTS
For purposes of comparison and study of trends in nutrients, information on percentaces of total supplies of nutrients derived from the different groups is given in table 47 for a few significant periods.


Table 47. - Percentage of total nutrients contributed by major food groups in selected periods - Contimued


1/ 0.05 percent or less. 2/These percentages were derived fram nutrient data which included the quantities of iron, thiamine, riboflavin, and niacin added to prepared cereals, white flour, and bread.
3/ Preliminary.

CHAPTER 5. SUPPLEMENTARY MATERIAL ON FOOD CONSUMPTION AND DENAND
The information on food consumption described in the preceding chapters was derived from data on aggregate supplies and disappearance of food. Related to these data are the estimates of the retail value of farm food products, the data on the approximate values at retail of selected food commodities consumed, and some calculations on nutrients which are described hereafter.

Another aggregative measure often used for food consumption is the Department of Commerce series on food expenditures. This series is an integral part of the estimation of national income. Because disposable income, food expenditures, and BIS retail price data are so frequently used with time-series data on food consumption, they are, for convenience, included in this handbook. Information on sales of retail food stores is reported regularly by the Department of Commerce.l/

During the last two decades, concern as to the adequacy of diets of the population as a whole and of particular groups and the need for data for food market analysis have contributed to increased emphasis on collection of information concerning food purchases and food preferences of households and institutions. Data on food purchases of families or households may be obtained for one period in time or over a period of time. The former may indicate consumption, or expenditures, or both in a particular day, week, or year. When information is collected over time, a panel of respondents must be set up. Surveys of these types and pilot studies of purchases by eating places and institutions are described in the sections that follow.

Related to studies on purchases by consumers are the studies of sales by retail stores. The methodology for store studies is described in publications issued under the direction of Max Brunk of Cornell University. 2/ Because of difficulties in estimating the population served by individual stores and in obtaining information on other purchases of such families, it is practically impossible to derive satisfactory data on per capita consumption from such studies. However, these studies provide much information on consumer behavior.

All of the foregoing types of data indicate or reflect consumer behavior with respect to food. To some extent they have been used to infer consumer preferences. 3/ However, more satisfactory methods of

I/ U. S. Bureau of the Census. Monthly Retail Trade Report.
2/ Brunk, Max E., editor. Methods of Research in Marketing. Paper Nos. 1, 2, and 3. Department of Agricultural Economics, Cornell Agr. Expt. Sta. July 1951 and July 1952. See also Burrows, Glenn L. An Experiment in Marketing. Agricultural Economics Research 4(4):128-135. Oct. 1952, and Godwin, Marshall R. Customer Response to Varying Prices for Florida Oranges. Florida Agr. Expt. Sta. Bulletin 508. Dec. 1952.

3/ Burrows, Glenn L.Consumer Acceptance or Consumer Preference. Agricultural Economics Research 4(2):52-56. Apr. 1952.
ascertaining consumer wants and preferences have been developed in recent years. They take the form of carefully designed surveys by trained interviewers who use detailed question schedules. 4/ Among such studies of consumer preferences regarding food commodities made by the U. S. Department of Agriculture are Potato Preferences among Household Consumers 5/, Consumer Preferences Reçarding Apples and Winter Pears 6/, Consumers' Use of and Opinions about Citrus Products 7/, and Rice Preferences among Household Consumers 8/.

## RETAIL COST OF FARM-FOOD PRODUCTS 2/

The estimates of the Bureau of Agricultural Economics of the retail cost of farm food products are an outgrowth of the continuing research on marketing margins and costs for farm products. Estimates of the retail cost in table 48 represent the cost at retail-store prices of all domestic farm foods that were both sold by farmers and bought by civilian consumers in this country. 10/ These retail-cost estimates are derived from estimates of cash income received by farmers for these products and the estimated percentages that prices received by farmers represented of retail prices for the various commodities. These farmers' shares used in the computations were derived from retail food prices of the BAE (prices paid by farmers) combined with the BIS data on prices for food paid by urban wage earners.

Retail-cost series are estimated for each of six major commodity groups of farm food products. The groups are (l) meat products, (2) dairy products, (3) poultry and eggs, (4) bakery and other cereal products, (5) fresh and processed fruits and vegetables, and (6) other miscellaneous food products.

These estimates of the retail cost of farm food products are measured at the retail-store sales level. Therefore they do not include the additional costs of food bought in restaurants and other eating places nor do they include the value of foods consumed in households of farms where produced or the value of food products that are not produced on farms in this country. They do include sales by farmers directly to consumers.

4/ For discussion of various techniques see Clements, Forrest, and Meyers, Trienah, Ascertaining Consumer Wants, in forthcoming Yearbook of Agriculture for 1954 on Marketing.

5/ U. S. Dept. Agr. Misc. Pub. 667. 119 pp . Washington, D.C. Aug. 1943.
б/ U. S. Dept. Agr. Agr. Inform: Bul. 19. 69 pp . Washington,D.C. 1950.
$\overline{\bar{I}} / \mathrm{U}$. S. Dept. Agr. Agr. Inform. Bul. 50. 167 pp . Washington, D. C. 0ct̄. 1951.

3/ U. S. Dept. Agr. Agr. Inform. Bul. 15. 101 pp . Washington, D. C. July 1950.

9/ Prepared by Kenneth E. Osren, Bureau of Agriculturai Economics, and Richard O. Been, formerly of Bureau of Agricultural Economics.
10/ Revised data for table 48 are not available for years since 1945 because of revisions in the margin series $1946-52$ now in process from which the estimates wi.l. be derived. Such data will be published later in the quarterly publication at the BAE, The Marketing and Transportation Situation.

|  | All farm foods |  |  |  | Meat products |  |  | Dairy products |  |  | Poultry and eggs |  |  | Bekery and other cereal products |  |  | Fruits and vegetables |  |  | $\qquad$ |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Year |  | $\begin{aligned} & \text { Farm } \\ & \text { value } \\ & I \end{aligned}$ | $\begin{gathered} \text { Retall } \\ \text { cost } \\ 2 / \end{gathered}$ |  | Farm value $1 /$ | Retall cost 4 |  | Farm value 1/ | Retail cost 4/ |  | Farm value 1/ | Retail: cost 4/ |  |  | Retail: cost 4) |  | Fars 1/ | Retail cost 4/ | $\begin{gathered} \text { arket-: } \\ \text { 1ng : } \\ \text { harges: } \\ 3 /: \end{gathered}$ | $\begin{aligned} & \text { Farm } \\ & \text { value } \\ & 1 / \\ & \hline \end{aligned}$ |  | $\begin{aligned} & \text { arket- } \\ & \text { ing } \\ & \text { harges } \\ & \hline \end{aligned}$ |
|  | : | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { Bil. } \\ & \text { dol. } \end{aligned}$ | $\mathrm{Bi1}$. dol. | $\begin{aligned} & \text { Bil. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { do1. } \end{aligned}$ | B11. dol. | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { Bil. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { Bil. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { bil. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { Bil. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ | $\begin{aligned} & \text { B11. } \\ & \text { dol. } \end{aligned}$ |
|  | : |  |  |  | 1.35 | 2.26 | 0.91 | 0.62 | 1.23 | 0.61 | 0.45 | 0.66 | 0.21 | 0.44 | 1.42 | 0.98 | 0.55 | 1.44 | 0.89 | 0.12 | 0.40 | 0.28 |
| 1914 | : | 3.53 3.64 | 7.91 | 4.27 | 1.35 | 2.26 | . 91 | . 64 | 1.28 | . 64 | . 47 | . 67 | . 20 | . 49 | 1.62 | 1.13 | . 58 | 1.69 | 1.11 | . 11 | . 39 | . 28 |
| 1915 | : | 3.63 | 7.99 | 4.36 | 1.21 | 2.16 | . 95 | . 66 | 1.33 | . 67 | . 48 | . 68 | . 20 | . 59 | 1.74 | 1.15 | . 56 | 1.61 | 1.05 | . 13 | . 47 | . 34 |
| 1916 | : | 4.35 | 9.47 | 5.12 | 1.50 | 2.49 | . 99 | . 74 | 1.44 | . 70 | . 53 | . 75 | . 22 | . 68 | 1.99 | 1.31 | . 71 | 2.17 | 1.46 | . 19 | . 63 | . 54 |
| 1917 | : | 6.05 | 12.40 | 6.35 | 2.03 | 3.03 | 1.00 | . 94 | 1.68 | . 74 | . 68 | . 94 | . 26 | 1.15 | 2.78 | 1.63 | . 97 | 3.10 | 2.13 | . 38 | . 87 | . 59 |
| 1918 | : | 6.87 | 13.19 | 6.32 | 2.51 | 3.96 | 1.45 | 1.09 | 1.88 | . 79 | . 83 | 1.19 | . 36 | 1.05 | 2.45 | 1.40 | 1.04 | 2.72 3.33 |  | .35 .34 | . 1.09 | . 64 |
| 1919 | : | 7.55 | 15.22 | 7.67 | 2.50 | 4.14 | 1.64 | 1.34 | 2.38 | 1.04 | 1.03 | 1.45 | . 42 | 1.21 | 2.90 | 1.69 | 1.13 | 3.33 | 2.20 |  |  |  |
| 1920 | : | 7.36 | 16.52 | 9.16 | 2.15 | 4.12 | 1.97 | 1.40 | 2.53 | 1.13 | 1.10 | 1.58 | . 48 | 1.17 | 3.16 | 1.99 | 1.30 | 4.21 | 2.91 | . 24 | . 92 | . 68 |
| 1921 | : | 5.05 | 12.57 | 7.52 | 1.40 | 3.45 | 2.05 | 1.15 | 2.34 | 1.19 | . 77 | 1.16 | . 39 | . 62 | 2.42 | 1.80 | . 95 | 2.64 | 1.69 | . 16 | . 56 | . 40 |
| 1922 | : | 5.19 | 12.88 | 7.69 | 1.56 | 3.49 | 1.93 | 1.14 | 2.31 | 1.17 | . 75 | 1.12 | . 37 | . 59 | 2.36 | 1.77 | . 99 | 2.97 | 1.98 | . 16 | . 63 | . 47 |
| 1923 | : | 5.62 | 14.00 | 8.38 | 1.58 | 3.77 | 2.19 | 1.39 | 2.65 | 1.26 | . 83 | 1.24 | . 41 | . 69 | 2.43 2.52 | 1.84 | 1.03 | 3.15 | 2.12 | . 21 | . 71 | . 50 |
| 1924 | : | 5.87 | 14.51 | 8.64 | 1.73 | 4.07 4.88 | 2.34 2.18 | 1.34 1.47 | 2.59 2.83 | 1.25 1.36 | . 86 | 1.31 | . 45 | . 87 | 2.52 2.81 | 1.94 | 1.15 | 3.60 | 2.45 | . 2 | . 80 | . 58 |
| 1925 | : | 6.77 | 15.73 | 8.96 | 2.10 | 4.28 4.35 | 2.18 | 1.47 1.53 | 2.83 2.93 | 1.36 1.40 | .96 1.03 | 1.41 | . 46 | . 80 | 2.87 | 2.07 | 1.22 | 3.96 | 2.74 | . 19 | . 78 | . 59 |
| 1926 | : | 6.95 | 16.38 | 9.43 9.51 | 2.18 2.04 | 4.35 4.25 | 2.17 2.21 | 1.52 | 2.93 3.09 | 1.47 | 1.03 | 1.40 | . 44 | . 74 | 2.90 | 2.16 | 1.14 | 3.75 | 2.61 | . 22 | . 84 | . 62 |
| 1927 | : | 6.72 6.94 | 16.23 16.27 | 9.51 9.33 | 2.17 | 4.88 | 2.17 | 1.69 | 3.19 | 1.50 | 1.05 | 1.53 | . 48 | . 74 | 2.98 | 2.24 | 1.13 | 3.47 | 2.34 | . 22 | . 82 | . 60 |
| 1929 | : | 7.22 | 17.08 | 9.86 | 2.23 | 4.45 | 2.22 | 1.76 | 3.33 | 1.57 | 1.12 | 1.70 | . 58 | . 68 | 2.86 | 2.18 | 1.21 | 3.89 | 2.68 | . 22 | . 85 | . 63 |
| 1930 | : | 6.33 | 16.15 | 9.82 | 1.94 | 4.25 | 2.31 | 1.57 | 3.13 | 1.56 | . 93 | 1.51 | . 58 | . 56 | 2.78 | 2.28 | 1.13 | 3.68 | 2.55 | . 20 | . 80 | . 60 |
| 1931 | : | 4.66 | 13.06 | 8.40 | 1.37 | 3.58 | 2.21 | 1.25 | 2.66 | 1.41 | . 71 | 1.20 | . 49 | . 35 | 2.24 | 1.89 | . 86 | 2.84 | 1.98 | . 12 | . 54 | . 42 |
| 1932 | : | 3.40 | 10.61 | 7.21 | . 91 | 2.67 | 1.76 | . 97 | 2.21 | 1.24 | . 54 | . 88 | . 32 | . 26 | 1.91 | 1.65 | . 73 | 2.29 | 1.68 | . 13 | .76 | . 54 |
| 1933 | : | 3.56 | 10.93 | 7.30 | . 92 | 2.61 | 1.68 | .96 | 2.17 | 1.21 | . 58 | . 88 | . 32 | . 34 | 2.00 2.38 | 1.60 | . 73 | 2.59 | 1.86 2.03 | . 13 |  | . 54 |
| 1934 | : | 4.27 | 12.52 | 7.92 | 1.13 | 3.26 | 1.90 | 1.12 | 2.36 2.58 | 1.24 | . 58 | .98 1.09 | . 34 | . 52 | 2.38 2.41 | 1.75 | . 79 | 2.81 | 2.02 | . 18 | . 66 | . 48 |
| 1935 | : | 5.02 | 12.94 | 7.58 | 1.49 | 3.39 3.79 | 1.70 2.00 | 1.29 | 2.81 | 1.39 | . 77 | 1.16 | . 39 | . 58 | 2.51 | 1.93 | 1.00 | 3.22 | 2.22 | . 22 | . 80 | . 58 |
| 1936 | : | 5.78 5.98 | 14.29 14.18 | 8.50 | 1.90 | 3.95 | 2.05 | 1.49 | 2.90 | 1.41 | . 81 | 1.24 | . 43 | . 61 | 2.53 | 1.92 | . 95 | 2.76 | 1.81 | .22 | . 80 | . 58 |
| 1938 | : | 5.98 | 13.39 | 8.18 | 1.71 | 3.57 | 1.86 | 1.32 | 2.72 | 1.40 | . 77 | 1.16 | . 39 | . 41 | 2.42 | 2.01 | . 78 | 2.56 | 1.78 | .21 | . 96 | . 74 |
| 1939 | : | 5.17 | 13.37 | 8.19 | 1.69 | 3.54 | 1.85 | 1.32 | 2.76 | 1.44 | . 72 | 1.10 | . 38 | . 39 | 2.26 | 1.87 | . 86 | 2.79 | 1.93 | . 19 | . 92 | . 72 |
| 1940 | - | 5.57 | 13.77 | 8.19 | 1.75 | 3.56 | 1.81 | 1.48 | 3.05 | 1.57 | . 78 | 1.23 | . 45 | . 44 | 2.35 | 1.91 | . 92 | 2.65 | 1.73 | . 20 | . 93 | . 72 |
| 1941 | : | 7.00 | 15.68 | 8.66 | 2.34 | 4.12 | 1.78 | 1.70 | 3.39 | 1.69 | 1.00 | 1.47 | . 47 | . 54 | 2.48 | 1.94 | 1.09 | 3.01 | 1.92 | . 33 | 1.21 | . 86 |
| 1942 | : | 9.11 | 18.90 | 9.77 | 3.00 | 4.71 | 1.71 | 2.10 | 4.08 | 1.98 | 1.36 | 1.98 | . 62 | . 69 | 2.86 | 2.17 | 1.51 | 3.87 | 2.36 | . 45 | 1.40 | . 93 |
| 1943 |  | 11.14 | 21.35 | 10.46 | 3.50 | 5.19 | 1.86 | 2.20 | 3.98 | 1.85 | 1.99 | 2.72 | . 73 | . 91 | 3.26 | 2.35 | 2.06 | 4.78 | 2.72 | . 51 | 1.47 | . 86 |
| 1944 |  | 11.20 | 21.35 | 10.72 | 3.52 | 5.32 | 2.13 | 2.35 | 4.15 | 1.91 | 1.73 | 2.48 | . 85 | . 92 | 3.20 | 2.37 | 2.17 2.49 | 4.83 5.63 | 2.70 3.20 | . 51 | 1.41 | . 88 |
| 1945 |  | 12.40 | 22.83 | 11.23 | 3.62 | 4.97 | 1.82 | 2.49 | 4.41 | 2.03 | 2.23 | 3.03 |  |  |  | 2.50 | 2.49 | 5.63 |  | .う5 |  |  |
| 1946 | : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1947 | : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1948 | : |  |  |  |  |  |  | Data beginning 1946, in process of revision, will be publiahed in the Marketing and Transportation Situation as soon as available. $:$ |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1949 | : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1950 | : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1951 | : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1952 | : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

[^14]The estimates of retail cost of farm food products do not include all comporents of consumers' expenditures for all foods as do the estimates prepared and published by the Office of Business Economics. of the Department of Commerce which are described below. Several elements of additional cost are included in total food expenditures, which are omitted in the retail cost of farm food products. These include: (1) Cost of foods which are imported or of nonfarm origin such as coffee, tea, offshore sugar, fishery products, and spices, currently amounting to about 10 percent of the total; (2) value of foods consumed in households of producers, amounting to about ll percent when valued at equivalent retail prices and (3) value of foods bousht by the Federal Government for personnel in Armed Forces; (4) additional charges, above retail-store valuation, for preparation, service, and entertainment obtained with foods bought in eating places, accounting for perhaps 8 to 10 percent of total food expenditures.

## APPROXIMATE VALUES AT RETAIL OF FOOD CONSUMED

Still another approach to estimating food expenditures has been used by members of the staff of the Bureau of Agricultural Economics from time to time, to meet the need for information on expenditures for various groups of food commodities. Average quantities of individual foods or groups of foods consumed per capita in the United States were multiplied by average retail prices, usually the combination of Bureau of Labor Statistics data on prices paid by moderate-income families in large cities and BAE data on prices paid by farm families. (See Misc. Pub. No. $576 \mathrm{ll} /$ and current issues of The Marketing and Transportation Situation 12/.) For some commodities - fluid milk, for example additional refinements were made, such as valuing milk consumed on farms where produced at prices received by farmers. In other instances a rough approximation of this method was to multiply the indexes of average prices paid by indexes of civilian consumption of the various food groups.

Such estimates of food expenditures have certain inherent difficulties. These difficulties arise principally from failure to allow for variations in the part of the food supply that is marketed through restaurants and institutions at prices higher than those charged in retail stores, for the increases in costs of processing and service, and for the shifts in consumption within food groups.

## SUPPIIES OF MAJOR NUTRIENTS

A highly desirable measure of overall food consumption would be the intake of the several nutrients on an index basis. Unfortunately,

11/ U. S. Bureau of Agricultural Economics. Price Spreads between Farmers and Consumers for Food Products. U. S. Dept. Agr. Misc. Pub. 576, 290 pp., illus. 1945.

12/ U. S. Bureau of Agricultural Economics. The Marketing and Transportation Situation. (Processed.)
measurement of food as ingested has been developed only in laboratories, and as yet no way of assigning relative importance to the major nutrients has been developed to be used in combining them. Various suggestions for dealing with this problem have been made, and it is apparent that the kind of index used depends largely on the purpose at hand. The suggestions have included the use of harmonic means of the nutrient content and the use of harmonic means of the percentages which the supply for each of the 12 major nutrients bears to the Recommended Dietary Allowances.13/ Christensen has developed a technique of deriving the output of each of 10 nutrients for each food product of 1 acre of land or other unit of resources, dividing these outputs by the recommended daily allowance for a moderately active man to obtain the number of man-days for which the allowance would be supplied. 14 The simple average of the number of day's allowances for each nutrient is used as an index.

For certain purposes, estimates of the nutrient content or nutritive value of the food supply are a useful measure of changes in food consumption. These estimates and a description of the methodology involved are given in chapter 4.

## DESCRIPTIONS OF INCOME AND EXPENDITURE SERIES

The three series described below were revised back to 1929 by the Department of Commerce in accordance with the new concepts of national income, and were published in the National Income Supplement to Survey of Current Business.15/ Figures for years preceding 1929 were estimated by the Bureau of Agricultural Economics, based on studies made by the National Bureau of Economic Research and the National Industrial Conference Board, and on unpublished data of the United States Department of Commerce.

Disposable personal income represents the actual current income receipts of persons from all sources, less personal tax and nontax payments to Federal, State, and local governments. It is the closest overall statistical approximation to consumer purchasing power derived from current incomes (table 49).

Personal consumption expenditures consist of the market value of purchases of goods and services by individuals and nonprofit institutions and the value of food, clothing, housing, and financial services received by them as income in kind. They include the rental value of owner-occupied houses but do not include purchases of dwellings, which are classified as capital goods (table 50).

Food expenditures data represent the current dollar value of foods bought. This measure emphasizes the short supplies of individual foods

13/ National Research Council. Recommended Dietary Allowances. Natl. Res. Counc. Reprint and Cir. Ser. 122, rev., 6 pp .1945.

14/ Christensen, Raymond P. Efficient Use of Food Resources in the Unīted States. U. S. Dept. Agr. Tech. Bul. 963, 98 pp. illus. 1948. 15/ U. S. Department of Commerce, Office of Business Economics. National Income and Product of the United States, A Supplement to the Survey of Current Business. 216 pp., illus. 1951.
and changes in the general price level, rather than changes in food consumption. Also food is bought with varying amounts of service - sonetimes more is bought in self-service stores, at other times more of it moves through delicatessens, restaurants, and hotels. Available, information on food expenditures is given in table 51.

The Department of Commerce estimates of expenditures for food and alcoholic beverages 16/ include (1) food and alcoholic beverages bought for off-prenise consumption, (2) purchased meals and beverages, (3) food furnished fovernment (including military) and commercial employees and withdrawn $k$ : nonfarm proprietors (valued at wholesale prices), and (4) food proluced and consumed on farms (valued at farm prices). For 1929-39, the basic data for manufactured foods and alcoholic beverages were from the Census of Manufactures, for nonmanufactured farm food products from BAE estimates of farmers' cash income from marketings, for fresh and frozen fish from the Bureau of Fisheries, and for exports and imports from the foreign-trade statistics of the Department of Commerce.17/

The data on production from the Census of Manufactures were analyzed to exclude duplications - foods used in further manufacture of foods. The net-production data were adjusted for changes in manufacturers' inventories, transportation allowance added; and the resulting values were distributed among manufacturers' sales to wholesalers, retailers, and others (mainly institutions), consumers, and manufacturers' exports. Imports, including duties, were added to wholesalers' purchases from manufacturers, inventory adjustments were made, and markups were added to obtain total wholesalers! sales. From this total, exports by wholesalers were deducted, and the remainder of wholesalers' sales was broken down between sales to consumers and sales to retailers and others.

Values for foods other than those based on the Census of Manufactures were developed separately, using BAE cash marketings and data from the Bureau of Fisheries. Direct sales to retailers and consumers by farmers were segregated, and sales of the foods by wholesalers were estimated by adding imports, adjusting for changes in wholesalers' inventories, adding their markups, and deducting exports. As in the case of manufactured goods, wholesalers' sales of nonmanufactured foods were broken down betreen sales to consumers and sales to retailers and others.

At this point in the calculation an aggregate of food sales to retailers and others, of both manufactured and nonmanufactured food commodities, had been obtained which included: (1) Food sales for the population of institutions, for passengers on ocean transportation, etc.; (2) value of food furnished to Government and commercial employees and withdrawn by nonfarm proprietors; and (3) sales of food and

16/ The following description was prepared in ronsultation with members of the staff of the Office of Business Economics, Department of Cormerce. 17/ See footnote 83, p. 91.
alcoholic beverages to retailers for resale both as meals and beverages and as food and alcoholic. beverages for off-premise consumption.

From this figure on aggregate sales were deducted estimates of food sales for the population of institutions and other categories in (1) above. They were excluded from the data on food expenditures because they were included in other expenditure items such as Government expenditures and personal consumption expenditures for hospital services. From the remaining aggregate of sales to retailers and others were deducted food furnished to governmental and commercial employees and withdrawn by nonfarm proprietors and food and alcoholic beverages bought for resale as meals and beverages. Estimates of institutional and other excluded food and of food furnished to employees and withdrawn by nonfarm proprietors were developed from census and other sources. Purchases of food and alcoholic beverages at wholesale for resale as meals and beverages were based on pertinent sales data taken from retail and service censuses, but markups had to be subtracted and inventory adjustments made before this item could be subtracted from the remaining aggregate of sales to retailers and others to derive sales to retailers for resale for off-premise consumption. Residual food and beverages were treated as purchases by retail food and liquor stores, inventory adjusted, and markups to retail values added, which then were added to consumers' purchases from manufacturers, farmers, and wholesalers to give offa premise food sales. Sales of meals and beverages were taken directly from the retail and service censuses.

Data on food purchased for off-premise consumption were extrapolated, for the years after 1939 by retail sales data covering food and liquor stores, sales data of State liquor monopolies, and purchased meals and -beverages by data on sales of eating and drinking places. Estimates of food furnished to employees and withdrawn by nonfarm proprietors were carried into the later period from the same sources used through 1939 with the important military component obtained from the military services. General retail sales taxes and alcoholic beverage taxes not covered in markups were added beginning in 1933. Adjustments were made for nonconsumer purchases - business entertainment, salesmen's expense accounts, etc. - of food and alcoholic beverages, in the form of meals and beverages and of off-premise consumption.

## DESCRIPTION OF PRICE SERIES

Consumer price index measures time-to-time. changes in costs of fixed quantities of selected goods, rents, and services, by moderateincome families in large citjes. Figures for 1909-12 were estimated by BAP, using data on living costs of nonagricultural employees as given in Real Wages in the United States, 1890-1926 by Paul H. Douglas.18/ Other data were from the Bureau of Labor Statistics (table 52).

18/ Douglas, Paul H. Real Wages in the United States, 1890-1926. $68 \overline{2} \mathrm{pp} .$, illus. Boston and New York. 1930.

Index of retail food prices measures the time-to-time changes in the costs of fixed quantities of food bought by moderate income families in large cities. Data for 1909-12 were estimated by BAE; 1913 to date by the Bureau of Labor Statistics (table 52).

Index of nonfood costs measures changes in costs of fixed amounts of goods and services bought by moderate-income families in large cities. Data for 1909-12 were estimated by BAE; hitherto unpublished data for 1913 to date were prepared by the Bureau of Labor Statistics (table 52).

FAMILY SURVEY DATA ON FOOD CONSUMPTION 19/
Family survey data provide another measure of consumption. The information is usually given in terms of quantities bought or consumed at home by the household and of expenditures for food at home and away from home by members of the family. Prewar studies have been conveniently summarized by Woodbury $20 /$.

There are two chief methods of obtaining household data on consumption. One is to ask the housewife to recall the quantities of food consume during a previous period, usually a week. An interviewer then enters the amounts on a food list. The second is to record food purchases (or nonpurchased food brought into the kitchen) day by day and obtain an inventory of food on hanu both at the beginning and at the end of the period. The disadvantages and advantages of each method have been the subject of several investigations $21 /$. For large-scale studies, the first method - recall, food list - is probably the more suitable, especially for describing the diets of groups of families.

Several nationwide surveys and many small-scale studies of food consumption have been made in this country. The first large-scale family study that included data on food consumption was made by the U. S. Department of Commerce and Labor in 1899-1902 22/. Surveys of the consumption of wage earners and lower salaried clerical workers were made by the Bureau of Labor Statistics in 1918-19 23/ and in

19/ Revised with the assistance of Faith Clark, Bureau of Human Nutrition and Home Economics.

20/ Woodbury, Robert Morse. Methods of Family Living Studies, Income, Expenditures, Consumption. 144 pp. 1940 (International Labour Off. Studies and Repts. Ser. N (Statistics) No. 23).

21/ National Research Council. Nutrition Surveys: Their Techniques and Value. Natl. Research Counc. Bul. $117,144 \mathrm{pp}$. May 1949. Murray, Janet, Blake, Ennis C., Dickens, Dorothy, and Moser, Ada M. Collection Methods in Dietary Surveys. A Comparison of the Food List and Record in Two Farming Areas in the South. Southern Cooperative Series Bull. 23, April 1952.
$22 /$ U. S. Dept. Commerce and Labor. Cost of Living and Retail Prices of Food. Commr. Labor Ann. Rept. 18: 15-631. 1904.
23/U. S. Dept. Labor, Bur. Labor Statis. Retail Prices and Cost of Living Ser. Bull. 357,466 pp. 1924.

Table 49.- Disposable personal income, total and per capita, 1909-52 1/


1/ See text for definitions. 2/ Estimates for 1909-28, by the Bureau of Agricultural Economics, for 1929 to date by the Department of Commerce. $3 /$ This series uses the adjusted estimates of total population so the data are uniformly 98.6 percent of the per capita series which uses the unadjusted Census estimates of total population, including Armed Forces overseas. Because the adjustment factor is a constant percentage, indexes derived from adjusted per capita data are the same as those that might be calculated using unadjusted population data. 4/Bureau of Census estimates have been adjusted for underenumeration by a constant factor, assuming that 98.6 percent of the population was enumerated in the decennial censuses. See text. 5 Estimates for 1909-12 by the Bureau of Agricultural Economics, for 1913 to date by the Bureau of Labor Statistics.

Table 50.- Personal consumption expenditures, total and per capita, 1909-52 1/


1/See text for definitions. 2/Estimates for 1909-28 by the Bureau of Agricultural Economics, for 1929 to date by the Department of Commerce. 3/This series uses the adjusted estimates of total population so the data are uniformly 98.6 percent of the per capita series which uses the unadjusted Census estimates of total population, including Armed Forces overseas. Because the adjustment factor is a constant percentage, indexes derived from adjusted per capita data are the same as those that might be calculated using unadjusted population data. 4/ Bureau of Census estimates have been adjusted for underenumeration by a constant factor, assuming that 98.6 percent of the population was enumerated in the decennial censuses. See text. $\underline{5} /$ Estimates for 1909-12 by the Bureau of Agricultural Economics, for 1913 to date by the Bureau of Labor Statistics.

Table 51.- Food expenditures, total and per capita, 1929-52 I/


1/ See text for definitions. 2/ Estimated by the Department of Camerce. 3/This series uses the adjusted estimates of total population so the data are uniformiy 98.6 percent of the per capita series which uses the unadjusted Census estimates of total population, including Armed Forces overseas. Because the adjustment factor is a constant percentage, indexes derived from adjusted per capita data are the same as those that might be calculated using unadjusted population data. 4/Bureau of Census estimates have been adjusted for underenumeration by a constant factor, assuming that 98.6 percent of the population was enumerated in the decennial censuses. See text. 5/ Bureau of Labor Statistics.

Table 52. - Consumer price index for moderate-income families in large cities, 1913-52: index of nonfood costa. 1913-52; index of retall food prices, all foods, 1913-52, by food groups, 1923-52 1/


1 Derived by the Bureau of Agrioultural Economics from data on 1935-39 base published by the Bureau of Labor Statistics. Beginning Janlary 1953, the index has been on a revised basis, incorporating revised weights, an expanded sample of items, and a revised sample of cities, as desoribod in the February 1953 Monthly Labor Review. 2/ Represents all goods and services. 3/ Derived from a series prepared but not yet published by the Bureau of Labor Statistics; represents goods and services other than food. 4/ Includes poultry and fish. 5/ Includes butter. 6/ Excludes butter. 7/Includes potatoes. 8/ In addition to catogories shown separately, includes frozen fruits and vegetables.

1934-36 24/. The first nationwide study to include both farm and nonfarm families was the 1935-36 Consumer Purchases Study 25/. Another major study based on a much smaller sample but designed to cover all households in the country was the 1941-42 study of Family Spending and Saving in Wartime 26/. Two studies, using small samples, were made later during World War II - the 1944 study of wartime food purchases and a survey of food purchases of city families in 1945 27/.

With funds originally allocated under the Research and Marketing Act of 1946 the Bureau of Human Nutrition and Home Economics made several studies of family food consumption in urban areas in 1948-49. Data collected in the spring of 1948 in 68 cities were comparable with information obtained in the spring of 1942. In addition, a sample of housekeeping families in each of four cities in widely separated parts of the country reported on their consumption of food during one week in the winter of 1948. Studies of limited samples of families made in the spring and fall of 1948 and the spring and summer of 1949 provided a basis for studying seasonal variations in food consumption and for adjusting the 68 -city spring data to calendar-year averages. A series of 29 processed reports on the 1948 Food Consumption Surveys have been issued by the BHNHE 28/. Three publications for print are in press or in preparation. They review some of the more significant problems encountered in the analysis of family survey data. They are:

24/ Stiebeling, Hazel K., Phipard, Esther F. Diets of Families of Employed Wage Earners and Clerical Workers in Cities. U. S. Dept. Agr. Cir. 507, 141 pp .1939.

25/ Stiebeling, Hazel K., Monroe, Day, Coons, Callie M., Phipard, Esther F., and Clark, Faith. Family Food Consumption and Dietary Levels. Five Regions. (Consumer Purchases Study - Farm Series) U. S. Dept. Agr. Misc. Pub. 405, 393 pp., illus. 1941; and Stiebeling, Hazel K., Monroe, Day, Phipard, Esther F., Adelson, Sadye F., and Clark, Faith. Family Food Consumption and Dietary Levels. Five Regions. (Consumer Purchases Study - Urban and Village Series) U. S. Dept. Agr. Misc. Pub. 452, 268 pp., illus. 1941.

26/ U. S. Bureau of Human Nutrition and Home Economics. Family Food Consumption in the United States, Spring 1942. U.S. Dept. Agr. Misc. Pub. 550, 157 pp. 1944; and U. S. Bureau of Labor Statistics. Family Spending and Saving in Wartime. U. S. Bur. Labor Statis. Bul. 822, $218 \mathrm{pp} .$, illus. 1945.

27/ U. S. Bureau of Labor Statistics. Wartime Food Purchases. U.S. Bur. Labor Statis. Bul. 838, 26 pp. 1945; Brady, Dorothy S. Expenditures and Savings of City Families in 1944. U.S. Bur. Labor Statis. Monthly Labor Rev. January 1946; Food Purchases by City Families in February 1945. U. S. Bur. Labor Statis. Monthly Labor Rev. Feb. 1946.

28/ U. S. Bureau of Human Nutrition and Home Economics. List of Publications, 1948 Food Consumption Surveys. (Processed.)

Clark, Faith, and Fincher, Lillian. Nutritive Content of Homemakers' Meals, Four Cities, Winter 1948. U. S. Dept. Agr. Agr. Inform. Bull. 112 (In press.) (Data in this bulletin for separate meals and for food away from home contain implications for analysis of family surveys.)

Clark, Faith, and others. Food Consumption and Expenditures of Urban Families, 1948 and Comparison with 1942. (In preparation.)

Phipard, Esther, and others. Nutritive Content of Food Supplies of Urban Families, 1948. (In preparation.)

The latter two publications present the complete methodology for the surveys and additional analyses of the data not included in the earlier processed reports. Much of the tabular data are included. Excluded are the detailed commodity data for the four cities found in Preliminary Reports 1-4 and 8-11 above.

Two recent studies of rural food consumption add to earlier regional data from the Consumer Purchases Study. These are a cooperative study of family food consumption in three types-of-farming areas in the South 29/ and a study of rural farm and rural nonfarm consumption of food made by the Bureau of Human Nutrition and Home Economics in the North Central States in the spring of 1952 30/. These are supplemented by several smaller studies made by the Bureau of Human Nutrition and Home Economics $31 /$ and by many studies of food consumption made by experiment stations and nongovernmental institutions.

The Bureau of Labor Statistics made a comprehensive study of urban consumers' expenditures in 1950, supplemented by a survey of consumer purchases of food (and other goods and services) in the spring of 1951 32/. This study was made to provide the basis for a complete revision of the consumers' price index. No quantitative data are available as yet.

29/ See footnote 8, p. 152.
30/ Data being processed now.
Adelson, Sadye F., and Blake, Ennis C. Diets of Families in the Open Country, A Georgia and an Ohio County, Summer 1948. U. S. Dept. Agr. Misc. Pub. 704, April 1950.

Reagan, Barbara B., and Grossman, Evelyn. Rural Levels of Living in Lee and Jones Counties, Miss., 1945 and A Comparison of Two Methods of Data Collection. U. S. Dept. Agr. Agr. Inform.Bull. 41, Oct. 1951. Clark, Faith, and LeBovit, Corinne. Food Consumption of Farm Families, Meeker and Wright Counties. Spring 1950. (In preparation.)

32/ Ruark, Mary C., and Hurwitz, Abner. Survey of Consumer Expenditures in 1950. Monthly Labor Review 75(2):125-133. August 1952. See also Survey of Consumer Expenditures in 1950: Interpretation and Use of the Results. Monthly Labor Review 75(4):425-428. October 1952.

In providing data on the nutritive value of food consumed, it was found that the family survey type of measurement of consumption presents many of the same problems as the disappearance type of measurement. In those studies noted above in which the nutritive content of diets was computed, the nutritive value of the diets was computed in terms of the quantities of foods brought into the kitchen. Hence, losses from household waste and preparation of food must be subtracted before the nutritive value of diets can be compared with such yardsticks as the Recommended Dietary Allowances 33/. Current information on such losses is inadequate and probably highly variable so that the nutritive content of food as ingested can be calculated only in rough terms at this time.

Other problems arising from the character of the information obtained in family surveys are the seasonality of the data, the shortness of the reporting period (usually a week), and the exclusion of information on food eaten away from home from the commodity consumption data.

Certain differences between family survey data and disappearance data prevent close comparisons. In some instances survey data for various regional, urbanization, family type, or income groups must be weighted by the population in such categories to get national averages, but information on the distribution of families into such categories is inadequate. As yet no good method has been developed for including with or adding to the food consumed in homes the food that is consumed in restaurants and other institutions and at refreshment counters. Seasonality of the survey data may make direct comparisons with disappearance data meaningless for some commodities. An additional problem is the reporting in surveys of foods as processed - in the form in which they enter the kitchen. Many of the disappearance data are in the unprocessed or partially processed state. For example, in family surveys, consumption of bread is reported while in the disappearance data, quantities are in terms of flour, fat, sugar, and other ingredients that go into bread.

Family survey data are a reservoir of information for use in the study of the variations in food consumption and their causes. They are directly valuable to market analysts by indicating the location of present and potential markets for individual commodities. They are indispensable to economists who are concerned with realistic projections of aggregate demand and with interrelationships of prices and consumption of substitutable commodities. As is obvious from the sources of most of the surveys, they are basic to the formulation of consumer price indexes and to the evaluation of dietary adequacy.

Records of families food purchases on a continuing basis have been obtained by several private market-research organizations which sell the information on particular items to business firms manufacturing or distributing such commodities or to Government agencies: For
example, with funds provided by the Agricultural Marketing Act (RMA, Title II) the Bureau of Agricultural Econonics has contracted with the Market Research Corporation of America to collect data on consumer buying practices for selected fresh fruits, canned and frozen juices, and dried fruits, as related to family characteristics, region, and size of city since October 1949. Monthly, quarterly, and annual surmaries of consumer purchases of fruits and juices are published by the Bureau of Agricultural Economics and the Production and Marketing Administration. With other funds from the same act, Michigan State College and Harvard University have set up much smaller panels, the former being concerned primarily with dairy products, the latter with meats, poultry, and fish. Reports on these projects have not yet been published.

Panel-type surveys provide current measures of changes in family household purchases for home consumption as well as much background data. The validity of the results of panel surveys depends greatly on the care taken in sampling and maintaining the panels. Such surveys do not cover purchases by public or private eating places such as restaurants, hotels, hospitals,and other institutions.

## NONHOUSEHOLD CONSUMPTION OF FOOD

In 1949-51 the Bureau of Agricultural Economics and the University of Minnesota cooperated in a pilot study to investigate the role of eating places in the marketing of food products. 34 The field work covered only Minneapolis and Fairmont, Minn., but procedures were developed to measure food consumption in eating places. In addition, the relative importance of eating places in food marketing was evaluated.

Studies of food consumption in selected institutions of several types are now under way by the Bureau of Agricultural Economics and the Bureau of Human Nutrition and Home Economics. The first report on the findings of these studies and the procedures used is not expected to be published for some months.

## POPULATION DATA USED IN THIS HANDBOOK 35/

Estimates of the population of the United States, for January 1 and July 1, 1909 to 1952, used in computing per capita consumption rates are shown in table 53. Because data on military takings before 1941 were not available, estimates of per capita consumption for that period were based on total domestic food disappearance and utilized data for the total population, including members of the Armed Forces overseas. For 1941 to date, data on military takings for most commodities were deducted from total domestic consumption and the per-capita figures were based on the estimates of the population eating out of civilian

34/ Sartorius, Lester C., and Burk, Marguerite C. Eating Places as Marketers of Food Products. Bur. Agr. Econ. and Univ. of Minn. Marketing Research Report 3, 118 pp. Washington, D. C., 1952.

35/ Prepared by Helen R. White, Bureau of Agricultural Economics.
food supplies. In computing per capita food consumption, estimates of the population as of July $l$ were used when the food consumption estimates related to calendar-year periods; the January 1 population estimates were used for several commodities still carried on a crop-year basis.

The total population, including members of Armed Forces overseas, is defined as the civilian population residing in continental United States plus all Armed Forces of the United States. Members of the Armed Forces are included without regard to place of previous residence or induction, citizenship, or place of station. However, the estimates for 1909 to 1916 and for 1920 to 1939 do not take into account the small number of persons serving in the Armed Forces overseas.

The population eating out of civilian food supplies is defined as the civilian population residing in continental United States plus military personnel eating out of civilian food supplies (Armed Forces personnel on furlough, etc.) minus that part of the civilian population eating out of military supplies (primarily dependents of military personnel eating food bought at military commissaries). At present, the number of members of the Armed Forces eating out of civilian food supplies is probably approximately balanced by the number of civilians eating out of military supplies.

Both series of population estimates are based on estimates provided by the Bureau of the Census. Basic estimates for July 1, 1909, to 1939, and for January 1 and July I from 1940 to 1952, have been published by that agency in Historical Statistics of the United States, 1789-1945 36/, Statistical Abstract of the United States: 1947 37/, and Current Population Reports, Series P-25, Nos. 71 and 74 38/. Descriptions of the methods and data used by the Bureau of the Census in preparing these published estimates are presented in these reports.

It should be noted that the basic population estimates provided by the Bureau of the Census have been adjusted for underenumeration of persons of all ages in the decennial censuses. These adjustments are based on the assumptions (1) that 98.6 percent 39/ of the population

36/ U. S. Bureau of the Census, Historical Statistics of the United States, 1789-1945, Washington, D. C., 1949, p. 26.

37/ U. S. Bureau of the Census, Statistical Abstract of the United States, 1947, Washington, D. C., 1947, p. 9.

38/ U. S. Bureau of the Census, Current Population Reports, Series P-25, Nos. 71 and 74. (Processed.)

39/ This percentage is based on the results of a post-enumeration survey conducted by the Bureau of the Census as part of the 1950 Census. For discussion of this survey and of completeness of enumeration in other censuses, see the $U$. S. Bureau of Census report entitled U. S. Census of Population: 1950, Vol. II, Characteristics of the Population, Part I, U. S. Summary, Chapter B (Washington, D. C., 1952, pp. 20-23).
of continental United States was enumerated at the time of each decennial census, (2) that the relative underenumeration of the civilian population was the same as that of the total continental population, and (3) that there was no underreporting of the number of members of the Armed Forces overseas. Because of these adjustments, the estimates of the total population including members of the Armed Forces overseas are somewhat larger than those for the same dates published by the Bureau of the Census. Estimates of the population eating out of civilian food supplies are larger than estimates of the civilian population for the same dates published by the Bureau of the Census because of the underenumeration adjustments and, for January 1, 1941, through January l, 1946, because of the adjustments for members of the Armed Forces eating out of civilian food supplies. These latter adjustments were originally estimated by the Office of Price Administration on the basis of data from several official sources.

Table 53.- Population: Total and number eating out of civilian focii
supplies, Vraited States, 1909-52 1/


1/ Basic population estimates provided by the Bureau of the Census were adjusted for underenumeration of all age groups in decennial censuses. In computing per capitia food consumption, the population for the date closer to the midpoint of the year concerned was used (e.g., for consumption data on a calendar year basis, July 1 population was used). Beginning 1g4l, data on military takings for most comodities were deducted from total domestic consumption and per capita figures were computed using the series for population eating out of civilian supplies; data on military takings prior to 1941 were not available.

2/ Estimates computed from data supplied by several Federal agencies. For the period January 1, 1941, through Jamary 1, 1946, an adjustment was made to allow for members of the Armed Forces eating out of civilian supplies; these adjustments were originally estimated by OPA on the basis of data from several official sources.

Table 54.- Meat: Gupply ind distrioution, 1909-52 i/
(Carcass weight equivalent)


Table 54. - Meat: Supply and distribution, 1909-52 1/-Continued
(Carcass weight equivalent)

|  |  | Supp |  |  |  |  | Depar | $\frac{\text { Dist }}{\text { tment of }}$ | Agriculion |  | Domest | c d18app | earance |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  | ; |  |  |  | Commer -: | Depar | ment of |  | Net |  |  |  |
|  |  | :Commer-: |  |  | :Commer-: | cial : |  |  |  |  |  |  |  |
| Year: | :Produc-: | : cial | Imports: |  | : cial | exports: | Begin-: | Ending: | Deliv-: | chases: |  | C1vil-: | Per capita |
| Year : | : tion : | :stocks | 4/ | Total | :stocks |  | ning : | stocks: | eries | for : | tary | ian : | capita <br> 9/ |
|  | : 3 : | : Jan. ${ }^{\text {3 }}$ 1: |  |  | $:^{\text {Dec. }}{ }^{\text {31: }}$ | ship- ments : | stocks: |  |  | export: |  |  |  |
|  |  | : 3 |  |  |  | 5/: |  |  |  | 7/ |  |  |  |
|  | 11 i | Million |  | M1llion | 1110 | 110 | 111on |  |  | pounds | pounds | pounds | Pounds |
|  | :pounds | pounds | pounds | pounds | pounds | pounds | ounds |  |  |  |  |  |  |
|  | , |  |  |  |  |  | . - Veal |  |  |  |  |  |  |
|  | : 660 |  |  |  |  |  |  | --- | --- | --- | --- | 660 | 7.2 |
| 1909 | 660 | --- | --- | 660 |  |  |  |  |  |  |  |  |  |
|  | : 667 | --- | --- | 667 |  |  |  |  |  |  |  | 667 | 7.1 |
|  |  |  |  | 666 |  |  |  |  |  |  |  |  | 7.0 |
| 1912 : | : 662 | --- | --- | 662 | --- | --- | --- | --- | --- | --- | --- | 662 | 6.9 |
| 1913 : | 608 | --- | 1 | 609 | --- | --- | --- |  | --- | --- |  | 609 | 6.2 |
| 1914 | 569 | - | 3 | 572 | --- | --- | --- | --- | --- | --- | --- | 572 | 5.7 |
|  | : |  |  |  |  |  |  |  |  |  |  | 591 | 5.8 |
| 1915: | 590 | --- | 1 | 591 | --- | --- | --- |  |  |  |  | 656 | 6.3 |
| 1917 | 655 | --- | 1 | 745 | --- | --- | --- |  | --- | --- | --- | 745 | 7.1 |
| 1917 | 760 | --- | 1 | 761 |  |  | - | --- |  |  | --- | 761 | 7.2 |
| 1919 | 819 | --- | 5 | 824 | --- | --- | --- | --- | --- | --- | --- | 824 | 7.8 |
|  |  |  |  |  |  |  |  |  |  |  |  | 852 | 7.9 |
| 1920 : | : 842 | --- | 10 | 852 | --- | --- | --- | --- | --- | --- | --- | 824 | 7.5 |
| 1921 : | 820 | --- | 4 | 824 | --- | --- | --- | --- | --- | --- | --- | 888 |  |
| 1922 : | : 852 | --- | 6 | 858 | --- | --- | --- | --- | --- | --- |  | 858 | 7.7 |
| 1923 : | : 916 | --- | 3 | 919 | --- | --- | --- | --- | --- | --- | --- | 919 | 8.4 |
| 1924 : | 972 | --- | 5 | 977 | --- | --- | --- | --- | --- | --- |  | 97 |  |
| 1925 : | : 989 | --- | 4 | 993 | --- | --- | --- | --- | --- | --- | --- | 993 | 8.5 |
| 1926 : | : 955 | --- | 4 | 959 | --- | --- | --. | --. | --- | --- |  | 959 | 8.0 |
| 1927 : | : 867 | --- | 8 | 875 | --- | --- | --- | --- | --- | --- | --- | 875 | 7.3 |
| 1928 : | : 773 | --- | 8 | 781 | --- | --- | --- | --- | --- | --- | --- | 781 |  |
| 1929 : | : 761 | --- | 5 | 766 | --- | --- | --- | --- | --- | --- | --- | 766 | 6.2 |
| 1930 : | : 792 | --- | 2 | 794 | --- | --- | --- | --- | --- | --- | --- | 794 | 6.4 |
| 1931 : | 823 | --- | ' | 824 | --- | --- | --- | --- | --- | --- |  | 824 | 6.6 |
| 1932 | 822 | --- | 101 | 822 | --- | --- | --- | --- | --- | --- |  |  | 6.5 7.0 |
| 1933 : | 891 | --- | $\underline{10}$ | 891 1,246 | --- | --- | --- | 64 | --- | 64 |  | 1,182 | 7.0 9.2 |
| 1934 | 1,246 |  |  | 1,246 | --- | --- | --- | 64 |  | 64 | --- | 1,182 | 9.2 |
| 1935 | 1,023 | --- | --- | 1,023 | --- | --- | 64 | --- | --- | -64 | --- | 1,087 | 8.4 |
| 1936 : | 1,075 | --- | 10 | 1,075 | --- | --- | --- | -.. | --- | --- | --- | 1,075 | 8.3 |
| 1937 : | 1,108 | -- | 10 | 1,108 | --- | --- |  |  |  | --- |  | 1,108 | 8.5 |
| 1938 : | 994 | --- | 10 | 994 | --- | --- | --- | --- | --- | --- | --- | 994 | 7.6 |
| 1939 : | : 991 | -- | 10 | 991 | --- | --- | --- | --- | --. | --- | --- | 991 | 7.5 |
| 1940 : | : 981 | --- | 10 | 981 | --- | --- | --- | --- | --- | --- | --- | 981 | 7.3 |
| 1941 : | : 1,036 | --- | 10 | 1,036 | --- | 5 | --- | --- | - | --- | 26 | 1,005 | 7.5 |
| 1942 : | : 1,151 | --- | 1 | 1,152 | --- | 3 | --- | --- | $10 /$ | $10 /$ | 65 | 1,084 | 8.1 |
| 1943 : | : 1,167 | --- | 1 | 1,168 | - | 3 | --- | 9 | 16 | 25 | 81 | 1,059 | 8.1 |
| 1944 : | : 1,738 |  | 1 | 1,739 | 8 | 4 | 9 | 6 | 25 | ๕2 | 111 | 1,594 | 12.2 |
| 1945 : | : 1,664 | 8 | 1 | 1,673 | 10 | 3 | 6 | 11 | 7 | 12 | 112 | 1,536 | 11.7 |
| 1946 : | : 1,443 | 10 | 1 | 1,454 | 12 | 3 | 11 | 1 | 18 | 8 | 49 | 1,382 | 9.8 |
| 1947 : | : 1,605 | 12 | 10 | 1,617 | 21 | 17 | 1 | --- | 1 | --- | 34 | 1,545 | 10.7 |
| 1948 : | : 1,423 | 21 | 5 | 1,449 | 21 | 4 | --- | --- | --- | --- | 40 | 1,384 | 9.4 |
| 1949 : | 1,334 | 21 | 7 | 1,362 | 16 | 2 | --- | --- | --- | --- | 33 | 1,311 | 8.8 |
| 1950 : | : 1,230 | 16 | 10 | 1,256 | 14 | 2 | --- | --- | --- | --- | 34 | 1,206 | 7.9 |
| 1951. | - 1,061 | 14 | 12 | 1,087 | 17 | 2 | --- | --- | --- | --- | 63 | 1,005 | 6.6 |
| 1952 13 | 13/ 1,173 | -17 | 10 | 1,190 | 24 | 1 | --- | --- | --- | --- | 62 | 1,103 | 7.1 |

Table 54 . - Meat: Supply and distribution, 1909-52 I/ - Continued
(Carcass weight equivalent)


Table 54.- Meat: Supply and distribution, 1909-52 1/ - Continued (Carcass weight equivalent)


Table 54.- Meat: Supply and distribution, 1909-52 1/-Continued
(Carcass weight equivalent)

:Million Million Million Million Million Million Million Million Million Million Million Million :pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds Pounds

|  | E.- Total meat |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1909 | 14,740 | --- | 2 | 14,742 | --- | 698 | --- | --- | --- | --- | --- | 14,044 | 153.0 |
| 1910 | 13,998 | --- | 3 | 14,001 | --- | 474 | --- | --- | --- |  | --- | 13,527 | 144.4 |
| 1911 | 14,869 | --- | 3 | 14,872 |  | 608 | --- | --- |  |  |  | 14,264 | 149.8 |
| 1912 | 14,453 |  | 5 | 14,45 | --- | 557 | --- | --- | --- | --- | --- | 13,901 | 143.8 |
| 1913 | 14,475 | --- | 45 | 14,520 | -- | 552 | --- | --- |  |  | --- | 13,968 | 141.7 |
| 1914 | 14,103 | --- | 328 | 14,431 | --- | 554 | --- | --- | --- | --- | --- | 13,877 | 138.1 |
| 1915 | 14,886 |  | 130 | 15,016 |  | 1,455 | --- | --- |  | --- | --- | 13,561 | 133.0 |
| 1916 | 15,907 | 574 | 39 | 16,520 | 804 | 1,425 | --- | --- | --- | -- | --- | 14,291 | 138.2 |
| 1917 | 15,501 | 804 | 61 | 16,366 | 926 | 1,452 | --- | --- | --- | --- | --- | 13,988 | 133.3 |
| 1918 | 17,341 | 926 | 381 | 18,648 | 1,071 | 2,766 | --- | --- |  |  | --- | 14,811 | 139.7 |
| 1919 | 16,642 | 1,071 | 95 | 17,808 | 907 | 2,305 | --- | --- | --- | --- | --- | 14,596 | 137.1 |
| 1920 : | 15,334 | 907 | 166 | 16,407 | 745 | 1,173 | --- | --- | --- |  | --- | 14,489 | 134.2 |
| 1921. | 15,178 | 745 | 60 | 15,983 | 506 | 938 | --- | --- | --- | --- | --- | 14,539 | 132.1 |
| 1922 | 16,138 | 506 | 53 | 16,697 | 691 | 844 | --- | --- |  |  | --- | 15,162 | 135.9 |
| 1923 | 17,708 | 691 | 40 | 18,439 | 817 | 1,130 | --- | --- | --- | --- | --- | 16,492 | 145.3 |
| 1924 | 17,595 | 817 | 46 | 18,458 | 793 | 855 | --- | --- | --- | --- | --- | 16,810 | 145.3 |
| 1925 | 16,598 | 793 | 49 | 17,440 | 559 | 661 | --- | --- | --- | --- | --- | 16,220 | 138.0 |
| 1926 | 16,649 | 559 | 92 | 17,300 | 579 | 522 | --- | --. |  |  |  | 16,199 | 136.1 |
| 1927 | 16,321 | 579 | 167 | 17,067 | 604 | 415 | --- | --- | --- | --- | --- | 16,048 | 133.0 |
| 1928 | 16,248 | 604 | 207 | 17,059 | 775 | 424 | --- | --- | --- | --- | -- | 15,860 | 129.8 |
| 1929 | 16,147 | 775 | 264 | 17,186 | 730 | 472 | --- | --- | - |  |  | 15,984 | 129.4 |
| 1930 | : 16,016 | 730 | 140 | 16,886 | 601 | 400 | --- | --- | --- | - | --- | 15,885 | 127.3 |
| 1931 | : 16,456 | 601 | 57 | 17,114 | 618 | 284 |  | --- |  | --- | --- | 16,212 |  |
| 1932 | : 16,418 | 618 | 69 | 17,105 | 537 | 209 | --- |  | --- |  | --- | 16,359 | 129.2 |
| 1933 | :17,417 | 537 | 107 | 18,061 | 773 | 243 | -- | 11 | --- | 382 | --- |  | 1342.0 142.0 |
| 1934 | -18,839 | 713 | 120 | 19,672 | 834 | 269 | 11 | 393 | --- | 382 | --- | 18,187 |  |
| 1935 | : 14,427 | 834 | 212 | 15,473 | 436 | 191 | 393 | 304 | --- | -89 | --- | 14,935 | 115.8 |
| 1936 | 16,761 | 436 | 271 | 17,468 | 871 | 174 | 304 | --- | --- | -304 | --- | 16,727 | 128.9 |
| 1937 | 15,709 | 871 | 307 | 16,887 | 463 | 167 | --- | --- | --- |  |  | 16,257 | 124.5 |
| 1938 | : 16,479 | 463 | 257 | 17,199 | 492 | 207 | --- |  |  |  | --- | 16,500 | 125.4 |
| 1939 | : 17,534 | 492 | 264 | 18,290 | 551 | 246 | --- | --- |  |  |  | 17,493 | 131.8 |
| 1940 | : 19,076 | 551 | 174 | 19,801 | 768 | 221 | --- | -- | --- |  |  | 18,812 | 140.4 |
| 1941 | : 19,569 | 768 | 269 | 20,606 | 603 | 173 | --- | 75 | 373 | 448 | 448 | 18,934 | 141.6 |
| 1942 | : 21,912 | 603 | 214 | 22,729 | 636 | 104 | 75 | 485 | 1,166 | 1,576 | 1,962 | 18,451 | 138.4 |
| 1943 | : 24,482 | 636 | 235 | 25,353 | 763 | 70 | 485 | 590 | 2,281 | 2,386 1,495 | 3,213 | 19,827 | 152.2 |
| 1944 | : 25,178 | 763 | 190 | 26,131 | 433 | 98 | 590 | 267 | 1,818 | 1,495 |  |  |  |
| 1945 | 23,691 | 433 | 130 | 24,254 | 649 | 75 | 267 |  | 6/1,165 | 1,220 | 3,568 | 18,742 | 143.2 |
| 1946 | 22,934 | 649 | 20 | 23,603 | 451 | 117 | 322 |  | 6/1,066 | 773 | 918 | 21,344 | 152.1 |
| 1947 | 23,338 | 451 | 64 | 23,853 | 727 | 312 | 29 | --- | 29 |  | 467 | 21,110 | 143.4 |
| 1948 | : 21,300 | 727 | 350 | 22,377 | 665 | 138 | --- |  |  | 6 | 472 |  | 142.6 |
| 1949 | : 21,662 | 665 | 242 | 22,569 | 625 | 136 | --- | --- | 6 | 6 | 4 | 1,330 |  |
| 1950 | : 22,079 | 625 | 368 | 23,072 | 670 | 135 | --- |  | --- | --- | 587 | 21,680 | 142.4 |
| 1951 | 21,909 | 670 | 526 | 23,105 | 798 | 157 | --- | --- | --- |  | 1,347 | 20,803 | 135.8 |
| 1952 13 | 23,035 | 798 | 459 | 24,292 | 797 | 185 | --- | --- | --- | --- | 917 | 22,393 | 14.1 |

l/ Includes products converted to carcass weight equivalent; excludes edible offals. See text for explanation.

2/ Includes following slaughter under Emergency Drought Program: Beef, 1,279 million pounds in 1934, 60 million in 1935, and 1 million in 1936; veal, 181 million pounds in 1934, 6 million in 1935; lamb and matton, 51 mililion in 1934. Pork includes 100 million pounds slaughtered under sow and pig purchase program and 53 million pounds under supplemental hos purchase program in 1933 and 159 million in 1934. Total meat produced under Government emergency programs: 1933, 153 million pounds; 1934, 1,669 million pounds; 1935, 65 million pounds; 1936, 1 million pounds. Prior to 1940 data include federally inspected meat production in Hawail and the Virgin Islands.

3/ Cold-storage holdings in public warehouses and packing plants, minus Government holdings during 1941-47. Product weight as reported by FMA assumed to be equivalent to carcass weight.

4 For all meats except beef, general imports prior to 1933 and imports for consumption 1934 and thereafter. Beef, imports for consumption 1909 to date.

5/ Beginning 1941 excludes military shipments and all USDA shipments for lend-lease, UNRRA and other claimants. Exports and shipments of veal are not reported separately; beginning 1941 estimates obtained as a constant percentage of total beef and veal.

6/ Deliveries for lend-lease, UNRRA, and other foreign supply programs.
7/ Net quantities of meat drawn by USDA from domestic channels for consumption 1933-36, for export beginning 1941. USDA transactions 1934-36 show accumulation of stocks in first years of Emergency Drought Program for consumption in later years.

8/ Total military takings, including those for civilian feeding in occupied areas. Exclude Army transfers of meat to UNRRA, adjusted to year procured. Estimates of military takings are not available for World War I or for any other year prior to 194l

9/Beginning 1941, per capita consumption of civilian population only.
10/ Less than 500,000 pounds.
11/ Includes 114 million pounds of beef procured by Army in 1945 and transferred to USDA and UNRRA in 1945 and 1946.

12/ Includes beef transferred by military agencies to UNRRA: 1945, 187 million pounds; 1946, 73 million pounds.

13/ Preliminary.
14/ Includes 55 million pounds of pork procured by Army in 1945 and transferred to USDA and UIRRRA in 1945 and 1946.

15/ Includes pork transferred by military agencies to UNRRA: 1945, 118 million pounds; 1946, 35 million pounds.

16/ Includes beef and pork transferred by military agencies to UIRRA. See footnotes 12/ and 15/.

Table 55.- Edible offals: Supply and distribution 1909-52

| Year | Supply |  |  |  | Distribution |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | otal :Beginning: |  |  |  | Ending : Cammercial : Domestic disappearance |  |  |  |  |
|  | produc-: | : com- : |  |  | com'l | : exports and |  |  |  |
|  | tion | : mercial : | $3 /$ | Total | stocks | : shipments to | :Militar | Civilian | Per capita |
|  | 1/ | :stocks 2/: | - |  | $2 /$ | :Territories 3 |  | Civilian | capita <br> 4/ |
|  | M11.1b. | Mil.1b. | M11.1b. | M11.1b. | M11.1b. | Mil.1b. | Mil.1b | M11.1b. | Lb. |
| 1909 | 1,004 | --- | --- | 1,004 | --- | --- | --- | 1,004 |  |
| 1910 | 955 | --- |  | 955 | --- | -- | --- | 1,004 | 10.9 |
| 1911 | 1,012 | --- |  | 1,012 | --- | --- | --- | 1,012 | 10.6 |
| 1912 | 983 | --- |  | 983 | --- | --- | --- | 1,983 | 10.2 |
| 1913 | 983 | --- |  | 983 | --- | --- | --- | 983 | 10.0 |
| 1914 | 956 | --- |  | 956 | --- | --- | --- | 956 | 9.5 |
| 1915 | 1,011 | --- | --- | 1,011 | --- | --- | --- | 1,011 | 9.9 |
| 1916 | 1,083 | --- | --- | 1,083 | --- | --- | --- | 1,083 | 10.5 |
| 1917 | 1,061 | -- | --- | 1,061 | -- | --- | --- | 1,061 | 10.1 |
| 1918 | 1,184 | 56 | --- | 1,240 | 129 | --- | --- | 1,111 | 10.5 |
| 1919 | 1,138 | 129 | --- | 1,267 | 109 | --- | --- | 1,158 | 10.9 |
| 1920 | 1,052 | 109 | --- | 1,161 | 75 | --- | --- | 1,086 | 10.1 |
| 1921 | 1,040 | 75 | --- | 1,115 | 60 | --- | --- | 1,055 | 9.6 |
| 1922 | 1,106 | 60 | --- | 1,166 | 63 | --- | --- | 1,103 | 9.9 |
| 1923 | 1,214 | 63 | --- | 1,277 | 83 | --- | --- | 1,194 | 10.5 |
| 1924 | 1,208 | 83 | --- | 1,291 | 92 | --- | --- | 1,199 | 10.4 |
| 1925 | 1,142 | 92 | --- | 1,234 | 57 | --- | --- | 1,177 | 10.0 |
| 1926 | 1,144 | 57 | --- | 1,201 | 64 | --- | --- | 1,137 | 9.6 |
| 1927 | 1,118 | 64 | --- | 1,182 | 61 | --- | --- | 1,121 | 9.3 |
| 1928 | 1,109 | 61 | --- | 1,170 | 83 | --- | --- | 1,087 | 8.9 |
| 1929 | 1,101 | 83 | --- | 1,184 | 90 | --- | --- | 1,094 | 8.9 |
| 1930 | 1,092 | 90 | --- | 1,182 | 34 | --- | --- | 1,098 | 8.8 |
| 1931 | 1,121 | 84 | --- | 1,205 | 66 | --- | --- | 1,139 | 9.1 |
| 1932 | 1,119 | 66 | --- | 1,185 | 43 | --- | --- | 1,142 | 9.0 |
| 1933 | 1,189 | 43 | -- | 1,232 | 65 | -- | --- | 1,167 | 9.2 |
| 1934 | 1,298 | 65 | $5 /$ | 1,363 | 126 | 28 | --- | 1,209 | 9.4 |
| 1935 | 994 | 126 | 1 | 1,121 | 74 | 17 | --- | 1,030 | 8.0 |
| 1936 | 1,152 | 74 | 5/ | 1,226 | 132 | 18 | --- | 1,076 | 8.3 |
| 1937 | 1,083 | 132 | 1 | 1,216 | 67 | 14 | --- | 1,135 | 8.7 |
| 1938 | 1,130 | 67 | $5 /$ | 1,197 | 72 | 19 | --- | 1,106 | 8.4 |
| 1939 | 1,200 | 72 | 1 | 1,273 | 95 | 19 | --- | 1,159 | 8.7 |
| 1940 | 1,303 | 95 | 2 | 1,400 | 102 | 11 | --- | 1,287 | 9.6 |
| 1941 | 1,338 | 102 | 4 | 1,444 | 105 | 8 | -- | 1,331 | 10.0 |
| 1942 | 1,498 | 105 | 2 | 1,605 | 86 | 11 | 5/ | 1,508 | 11.3 |
| 1943 | 1,669 | 86 | $5 /$ | 1,755 | 137 | 22 | 2 | 1,594 | 12.2 |
| 1944 : | 1,740 | 6/97 | $5 /$ | 1,837 | 37 | 68 | 2 | 1,730 | 13.3 |
| 1945 : | 1,637 | 37 | $5 /$ | 1,674 | 41 | 3 | 3 | 1,627 | 12.4 |
| 1946 : | 1,579 | 41 | 5 | 1,620 | 56 | 1 | $5 /$ | 1,563 | 11.1 |
| 1947 : | 1,615 | 56 | $5 /$ | 1,671 | 71 | 9 | $5 /$ | 1,591 | 11.0 |
| 1948 : | 1,472 | 71 | 5 | 1,548 | 58 | 1 | $5 /$ | 1,489 | 10.1 |
| 1949 : | 1,495 | 58 | 10 | 1,563 | 62 | 2 | $5 /$ | 1,499 | 10.0 |
| 1950 : | 1,519 | 62 | 9 | 1,590 | 59 | 3 | $5 /$ | 1,528 | 10.0 |
| 1951 : | 1,502 | 59 | 8 | 1,569 | 64 | 6 | $5 /$ | 1,499 | 9.8 |
| 1952 7/: | 1,580 | 64 | 9 | 1,653 | 69 | 5 | 5/ | 1,579 | 10.3 |

1) Production of offals based on percentage of carcass-weight meat production, including farm: beef 6.7, veal 10.7, lamb and mutton 5.1 , pork exciuding lard 6.7 percent.

2/ Trimmings included prior to 19ل44; excluded beginning that date.
3/ Comparable data not available prior to 1934.
Civilian per capita only, beginning 1941.
Less than 500,000 pounds.
6/ Excludes an estimated allowance of 40 million pounds for trimings, which were reported in stocks prior to July 1, 1944.

7/ Preliminary.

Table 56 .- Comercial fish: Supply and distribution, 1929-52 //
(Edible weight)


See footnotes at end of table.

Table 56 .- Commercial fish: Supply and distribution, 1929-52 1/ -Continued (Fdible weight)


|  |  | C. Cured 13/ |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1929 | : | 83 | --- | 55 | 138 | - | 12 | --- | --- | --- | --- | --- | 126 | 1.0 |
|  | : |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1930 | : | 90 | --- | 42 | 132 | --- | 13 | --- | --- | --- | --- | --- | 119 | 1.0 |
| 1931 | : | 69 | --- | 38 | 107 | --- | 12 | -.- | --- | --- | --- | --- | 95 | . 8 |
| 1932 | : | 77 | --- | 22 | 99 | --- | 11 | --- | --- | --- | --- | -.- | 88 | . 7 |
| 1933 | : | 64 | --- | 16 | 80 | --- | 7 | --- | --- | --- | --- | --- | 73 | . 5 |
| 1934 | : | 70 | --- | 21 | 91 | --- | 7 | --- | --- | --- | --- | --- | 84 | . 7 |
| 1935 | : | 77 | --- | 22 | 99 | --- | 8 | --- | --- | --- | --- | --- | 91 | . 7 |
| 1936 | : | 71 | --- | 32 | 103 | --- | 8 | --- | --- | --- | --- | --- | 95 | .7 |
| 1937 | : | 75 | --- | 40 | 115 | --- | 8 | --- | --- | --- | --- | --- | 107 | . 8 |
| 1938 | : | 73 | --- | 39 | 112 | --- | 6 | --- | --- | --- | --- | --- | 106 | . 8 |
| 1939 | : | 73 | --- | 31 | 104 | --- | 8 | --- | --- | --- | --- | --- | 96 | . 7 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1940 | : | 71 | 1 | 24 | 95 | --- | 7 | --- | --- | --- | --- | --- | 88 | . 7 |
| 1941 | : | 71 | 14/ | 24 | 95 | 1 | 8 | --- | --- | --- | --- | --- | 86 | . 6 |
| 1942 | : | 72 | 1 | 22 | 95 | 1 | 5 | - | 14/ | 3 | 3 | 4 | 82 | . 6 |
| 1943 | : | 73 | 1 | 28 | 102 | 14/ | 4 | 14/ | 2 | 20 | 22 | --- | 76 | . 6 |
| 1944 | : | 75 | 14/ | 32 | 107 | 1 | 4 | 2 | 3 | 25 | 26 | 1 | 75 | . 6 |
| 1945 | : | 77 | 1 | 33 | 111 | 2 | 4 | 3 | 14/ | 7 | 4 | 13 | 88 | . 7 |
| 1946 | : | 74 | 2 | 37 | 113 | 2 | 8 | 14/ | $\underline{1}$ | 14/ | 14/ | 14/ | 103 | .7 |
| 1947 | : | 72 | 2 | 25 | 99 | 2 | 6 | - | --- | - | - | - | 91 | . 6 |
| 1948 | : | 70 | 2 | 26 | 98 | 2 | 4 | --- | --- | --- | --- | --- | 92 | . 6 |
| 1949 | : | 69 | 2 | 29 | 100 | 2 | 2 | --- | --- | --- | --- | --- | 96 | . 6 |
| 1950 |  | 70 | 2 | 29 | 101 | 2 | 2 | --- | --- | --- | --- | --- | 97 | . 6 |
| 1951 7/ |  | 68 | 2 | 30 | 100 | 2 | 1 | - | --- | --- | --- | --- | 97 | . 6 |
| 1952 ㅍ/ | - | 68 | 2 | 27 | 97 | 1 | 1 | --- | -- | --- | -- | --- | 95 | . 6 |


| 1929 | : 1,263 | 115 | 419 | 1,797 | 139 | 206 | --- | --- | --- | --- | --- | 1,452 | 11.8 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1930 | : 1,047 | 139 | 394 | 1,580 | 151 | 165 | --- | --- | --- |  | --- | 1,264 | 10.1 |
| 1931 | : 832 | 151 | 426 | 1,409 | 186 | 109 | --- |  | --- |  | --- | 1,114 | 8.9 |
| 1932 | : 702 | 186 | 410 | 1,298 | 154 | 87 |  |  | --- | --- | --- | 1,057 | 8.3 |
| 1933 | : 779 | 154 | 411 | 1,344 | 168 | 78 | --- |  |  | --- |  | 1,098 | 8.6 |
| 1934 | : 871 | 168 | 494 | 1,533 | 238 | 115 | --- |  | --- | --- |  | 1,180 | 9.2 |
| 1935 | : 1,025 | 238 | 406 | 1,669 | 196 | 119 | --- | -.- |  | --- |  | 1,354 | 10.5 |
| 1936 | : 1,005 | 196 | 599 | 1,800 | 174 | 111 | --- | -.- | -.- | --- |  | 1,515 | 11.7 |
| 1937 | : 1,054 | 174 | 527 | 1,755 | 247 | 120 | -.- | --- | --- | --- | --- | 1,388 | 10.6 |
| 1938 | : 972 | 247 | 519 | 1,738 | 190 | 116 | --- | --. | --- | --- | --- | 1,432 | 10.9 |
| 1939 | : 1,073 | 190 | 441 | 1,704 | 162 | 126 | --- | --. | --- | --- | --- | 1,416 | 10.7 |
| 1940 | : 1,115 | 162 | 390 | 1,667 | 114 | 150 | --- | --- | --- | --- | --- | 1,403 | 10.5 |
| 1941 | : 1,298 | 114 | 470 | 1,882 | 110 | 116 | --- | 120 | 56 | 176 | --- | 1,480 | 11.1 |
| 1942 | : 1,081 | 110 | 368 | 1,559 | 62 | 37 | 120 | 48 | 198 | 126 | 6/174 | 1,160 | 8.7 |
| 1943 | : 1,096 | 62 | 381 | 1,539 | 57 | 16 | 48 | 87 | 277 | 316 | - 117 | 1,033 | 7.9 |
| 1944 | : 1,170 | 57 | 390 | 1,617 | 68 | 21 | 87 | 150 | 144 | 207 | 189 | 1,132 | 8.7 |
| 1945 | : 1,289 | 68 | 426 | 1,783 | 92 | 29 | 150 | 10/88 | 111 | 49 | 11/327 | 1,286 | 9.8 |
| 1946 | : 1,256 | 92 | 388 | 1,736 | 100 | 71 | 10/88 | - 29 | 133 | 74 | - 31 | 1,460 | 10.4 |
| 1947 | : 1,221 | 100 | 426 | 1,747 | 88 | 130 | - 29 | 3 | 89 | 63 | 25 | 1,441 | 10.0 |
| 1948 | : 1,281 | 88 | 461 | 1,830 | 153 | 98 | 3 | -.- | 7 | 4 | 35 | 1,540 | 10.4 |
| 1949 | : 1,280 | 153 | 488 | 1,921 | 170 | 148 | --- | --- | --- | --- | 27 | 1,576 | 10.5 |
| 1950 | : 1,486 | 170 | 548 | 2,204 | 304 | 124 | --- | --- | --- | --- | 25 | 1,751 | 11.5 |
| 1951 I/ | : 1,323 | 304 | 547 | 2,174 | 252 | 161 | --- | -.. | --- | -.- | 48 | 1,713 | 11.2 |
| 1952 I/ | : 1,220 | 252 | 609 | 2,081 | 269 | 59 | --. | --- | --- | --- | 43 | 1,710 | 11.0 |

See footnotes at end of table.

Table 56.- Comercial fish: Supply and diatribution, 1929-52 $1 /$-Continued (Hdible weight)

1/Data shown are for continental United States.
2/ Fresh and frozen fish stocks are estimated January 1 basis prior to 1943, when actual January 1 stocks were reported. As of the end of 1945, stocks exclude quantities reported held for Government agencies. Canned fish stocks include only salmon at the producer level; reporting of these data discontinued after January 1, 1942. Indications are that no significant year-to-year change in producers' stocks of canned fish occurred between 1942 and 1948. Beginning with 1948 annual stock changes estimated based on fragmentary data from trade sources. Cured fish stocks include smoked fish only; data not available prior to Jenuary 15, 1941.

3/ Includes shipments from the Territories to continental United States, but excludes imports through territorial customs districts.

4/ Excludes exports through the Territories of the United States.
5/ Civilian only, 1942 to date.
6/ Estimated.
7/ Preliminary.
8/ Excludes canned food products containing small quantities of fish or shellfish, for example, clam chowder, clam broth, and codfish cake material.

2/ Not available.
10/i Includes about 1 million pounds of canned fish transferred to UNRRA by United States military agencies.

11/ Excludes about 1 million pounds of canned fish transferred to UNRRA by United States military agencies.

12/ Based on estimated net change in stocks during the year.
13/ Excludes intermediate products which may be shown in the final stage of processing in this table or the canned fish table. Cured fish classified as "intermodiate products" include green salted: Cod, haddock, hake, pollock, and cusk; mild cured salmon.

14/ Less than 0.5 million pounds.

Table 57.- Chicken: Supply and distribution, 1909-52


1/ The estimated total output of chicken in the United States is based on the estimated quantity consumaction. Total and the quantity sold fram farms, with a l0-percent addition to these two output beginning 1934 also includes the estimated production or ceported separately and are also excluded. Data in terms all poultry other than turkey; beginning 1933 ducks have of reported product weights. 3/ Includes exports of blood and feathers only. 6/Ready-to-cook, including giblets. per capita consumption beginning 1941. 5/ Excluding blood and feathers on 75 percent (equivalent to 66 percent of Per capita series 1909-46 estimated from ressed weight to date cong ratio of 75 percent equale live weight). Data on supply and distribution for 1947 to date camputed fion pounds ( 14 million pounds canned) transcommercial broilers and 68 percent for farm chickens. $7 /$ Includes 57 million pounds (1) milion pounds of Army stocks to UNRRA. 9/Preliminary.

Table 58.- Turkey: Supply and distribution, 1929-52 1/


1/ The annual output of turkeys includes the quantity sold from farms and the quantity consumed on farms. Exports have been negligible and data are not reported separately.

2/ Data take into account changes in USDA stocks.
3/Civilian consumption only, beginning 1941.
4/ Excluding blood and feathers only.
5/ Ready-to-cook, including giblets. Calculated as 75 percent of live-weight (or 82.4 percent of dressedweight). Per capita series on eviscerated basis calculated directly from dressed-weight data, 1929-46; but directly from supply and distribution data for 1947 to date. Stock data in terms of product weights as reported.

Table 59 .- Eggs: Supply and distribution, 1909-52

| Year | Supply |  |  |  | Distribution |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  |  | $\begin{aligned} & \begin{array}{c} \text { Eggs } \\ \text { used } \\ \text { usor } \\ \text { fhatch } \\ \vdots \text { ing } \\ \text { ing } \\ \hline \end{array} \end{aligned}$ | Department of Ariculture |  |  |  | Domestic disappearance |  |  |
|  |  |  |  |  |  |  |  |  | ture <br> Net pur chases for export |  |  |  |
|  |  |  |  |  | Begin |  |  |  |  |  |  |  |
|  |  |  |  |  | ning | ndi |  |  |  |  | Civi |  |
|  |  |  |  |  |  |  |  |  |  |  |  | 6 apita |
|  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : Mil. | Mil. | Mil. | Mil. |  |  | Mil. | Mil. | Mil. | $\overline{M i 1 .}$ | Mil. | Mil. | Mil. | Mil. | Mil. | Numter |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1909 | 2,319 | --- |  | 2,319 |  |  | --- | 5 | 106 | -.- |  |  |  |  | 2,208 | 289 |
| 1910 | 2,475 |  | 3 | 2,478 |  |  | --- | 6 | 116 | - | --- |  |  | --- | 2,356 | 302 |
| 1911 | 2,695 | --- | 5 | 2,700 |  |  | --- | 13 | 112 | --- | --- | --- | --- | --- | 2,575 | 325 |
| 1912 | 2,594 |  | 8 | 2,602 |  | 19 | 109 | -- |  |  |  |  | 2,474 | 307 |
| 1913 | : 2,576 |  | 11 | 2,587 |  | 18 | 112 | --- | --- | --- | --- | --- | 2,457 | 299 |
| 1914 | 2,557 | --- | 19 | 2,576 | --- | 21 | 116 | --- | --- | --- | --- | --- | 2,439 | 291 |
| 1915 | : 2,741 |  | 17 | 2,758 | --- | 22 | 114 | -- |  | --- |  |  | 2,622 | 308 |
| 1916 | : 2,640 | 45 | 26 | 2,711 | 30 | 28 | 111 | --- | --- | --- | --- | --- | 2,542 | 295 |
| 1917 | : 2,539 | 30 | 40 | 2,609 | 52 | 20 | 113 | --- | --- | --- |  |  | 2,424 | 27 ? |
| 1918 | : 2,567 | 52 | 29 | 2,648 | 30 | 21 | 120 |  |  |  |  |  | 2,477 | 280 |
| 1919 | : 2,796 | 30 | 49 | 2,875 | 63 | 39 | 119 | --- | --- | --- | --- | -- | 2,654 | 299 |
| 1920 | : 2,722 | 63 | 50 | 2,835 | 35 | 27 | 116 | --- | --- | --- | --- | --- | 2,657 | 295 |
| 1921 | : 2,823 | 35 | 52 | 2,910 | 43 | 33 | 125 | --- | --- | --- | --- | --- | 2,709 | 295 |
| 1922 | : 3,025 | 43 | 54 | 3,122 | 59 | 35 | 131 | --- | --- | --- | --- | --- | 2,897 | 312 |
| 1923 | : 3,208 | 59 | 31 | 3,298 | 85 | 31 | 136 | --- | --- | --- |  |  | 3,046 | 322 |
| 1924 | : 3,171 | 85 | 41 | 3,297 | 50 | 28 | 136 | --- | --- | --- | --- | --- | 3,083 | 320 |
| 1925 | : 3,205 | 50 | 58 | 3,313 | 79 | 25 | 139 | --- | --- | --- |  |  | 3,070 | 31.4 |
| 1926 | : 3,414 | 79 | 53 | 3,546 | 61 | 27 | 146 | --- | --- | --- | -- |  | 3,312 | 334 |
| 1927 | : 3,541 | 61 | 36 | 3,638 | 66 | 29 | 151 | --- |  | --- | --- | --- | 3,392 | 337 |
| 1928 | : 3,544 | 66 | 35 | 3,645 | 89 | 20 | 139 | --- |  | --- |  |  | 3,397 | 334 |
| 1929 | : 3,476 | 89 | 53 | 3,618 | 66 | 12 | 147 | --- |  | --- |  |  | 3,393 | 330 |
| 1930 | : 3,581 | 66 | 44 | 3,691 | 125 | 19 | 149 | --- | - | --- | --- | --- | 3,398 | 327 |
| 1931 | : 3,532 | 125 | 34 | 3,691 | 109 | 8 | 135 | --- |  | --- |  | --- | 3,439 | 328 |
| 1932 | : 3,327 | 109 | 10 | 3,446 | 50 | 2 | 136 | --- | --- | --- | --- | -- | 3,258 | 309 |
| 1933 | : 3,255 | 50 | 9 | 3,314 | 72 |  | 137 | --- | - | --- | --- | --- | 3,103 | 293 |
| 1934 | : 3,156 | 72 | 8 | 3,236 | 72 | 2 | 122 | --- |  | --- |  |  | 3,040 | 285 |
| 1935 | : 3,081 | 72 | 22 | 3,175 | 85 | 2 | 124 | --- | --- | --- |  |  | 2,964 | 276 |
| 1936 | : 3,166 | 85 | 27 | 3,278 | 61 |  | 134 | --- | --. |  |  |  | 3,081 | 285 |
| 1937 | : 3,443 | 61 | 32 | 3,536 | 112 | 2 | 115 | --- |  |  |  |  | 3,307 | 304 |
| 1938 | : 3,424 | 112 | 6 | 3,542 | 59 | 2 | 124 | --- | --- | --- |  |  | 3,357 | 306 |
| 1939 | : 3,561 | 59 | 5 | 3,625 | 74 | 3 | 133 | --- | --- | --- |  |  | 3,415 | 309 |
| 1940 | : 3,640 | 74 | 7 | 3,721 | . 77 | 5 | 129 | --- | --- | --- | --- | --- | 3,510 | 314 |
| 1941 | : 3,840 | 77 | 15 | 3,932 | 75 | 12 | 174 | --- | 47 | 143 | 190 | 62 | 3,419 | 307 |
| 1942 | : 4,456 | 75 | 3 | 4,534 | 74 | 13 | 197 | 47 | 221 | 428 | 602 | 164 | 3,484 | 314 |
| 1943 | : 5,000 | 74 | 1 | 5,075 | 100 | 15 | 238 | 221 | 208 | 629 | 6.16 | 382 | 3,724 | 342 |
| 1944 | : 5,366 | 100 | 1 | 5,467 | 80 | 17 | 206 | 208 | 422 | 658 | 872 | 495 | 3,797 | 350 |
| 1945 | : 5,154 | 80 | 2 | 5,236 | 61 | 17 | 231 | 422 | 47 | 390 | 15 | 583 | 4,329 | 397 |
| 1946 | : 5,130 | 61 | 1 | 5,192 | 109 | 66 | 179 | 47 | 61 | 286 | 300 | 163 | 4,375 | 374 |
| 1947 | : 5,077 | 109 | 1 | 5,187 | 73 | 48 | 176 | 61 | 144 | 176 | 259 | 77 | 4,554 | 378 |
| 1948 | : 5,032 | 73 | 2 | 5,107 | 72 | 40 | 178 | 14.4 | 96 | 33 | -15 | /127 | 4,705 | 384 |
| 1949 | : 5,148 | 72 | 8 | 5,228 | 53 | 28 | 202 | 96 | 206 | 56 | 166 | 7/62 | 4,717 | 378 |
| 1950 | : 5,384 | 53 | 20 | 5,457 | 52 | 30 | 201 | 206 | 304 | 150 | 448 | 71 | 4,855 | 383 |
| 1951 | : 5,433 | 52 | 8 | 5,493 | 63 | 28 | 230 | 304 | 67 | 215 | -22 | 155 | 5,039 | 395 |
| 1952 | 8: 5,593 | 63 | 8 | 5,664 | 55 | 43 | 230 | 67 |  |  | -56 | 118 | 5,274 | 407 |

1 Total production of eggs consists of the estimated farm output plus 10 percent of such production to allow for nonfarm egg production. 2/ Data on storage stocks include only holdings of shell and frozen eggs through 1942. Data on year-end holdings of dried eggs prior to 1943 are not available. $3 /$ Import data consist of shell eggs and the approxdmate shell-egg equivalent of dried and frozen eggs. $4 \sqrt{\text { Export data in- }}$ clude shell egge only prior to 1941, but the quantities in other forms not reported were small. 5/ The quantities of eggs used for hatching were estimated from the number of chickens raised annually in the united States and the average number of eggs required per bird raised. As a nonfood item, the following storage losses have been included: 16 million dozen in 1944, 2 in 1945, 4 in 1948, 2 in 1949, and 1 in 1950. 6/ Civilian per capita only, beginning 1941. I/ Includes quantities transferred from USDA stocks for civilian feeding: 1948, 21 million pounds dried ( 63 million dozen): 1949, 703, M0 pounds dried ( 2 million dozen). 8/ Preliminary.

Table 60.- All cheese: Supply and distribution, 1909-52


1/ Items covered: All types of cheese except full-skim American cheese and cottage, pot, and bakers' cheese. Includes producticn by factories and quantities made on farms until 1927 when farm cheese ceased to be a significant factor. Data for 1909 as reported by Census of Manufactures; for 1910-17 estimates of total production were derived by interpolation on the basis of market receipts. 1918-39, annual estimates of factory production based on data from Census of Manufactures, State Departaents of Agriculture, and from data received directiy by the Bureau of Agricultural Economics fram cheese factories; 1940-date, data are as published by BAB in Production of Manufactured Dairy Products. Output of cheese on farms through 1926 was determined by interpolation between census years.
2) Stock data cover quantities in camercial storage warehouses, reported beginning 1916 in Cold Storage Report, Production and Marketing Administration.
3/ Data on imports, exports, and shipments are those published by the Department of Camerce, except for the period during World War II when this information was supplemented and partially replaced by data fram Department of Agriculture records. Imports prior to 1934 were "general imports," while for 1934 and following years they are "imports for consumption."

4/ Cold-storage stocks of 131 million pounds include approcimately 12 million pounds held by USDA and military.
$\overline{5} /$ The total stocks of 20 million pounds include about 8 million pounds held outside coumercial cold storage.
6/ Cold-storage stocks of 176 million pounds include about 102 million pounds held by Department of Agriculture and military
USDA holdings outside of commercial cold storage estimated at 40 million pounds and carmercial holdings at 5.5 million pounds.
7/ Cold-storage total of 145 million pounds includes 75 million pounds held by USDA and military. USDA holdings outside cawmer-
1 al cold storage totaled approximately 11 million pounds and camercial holdings were about 5 million pounds.
8/ Includes 23 million pounds transferred from military stocks.
9/ Excludes 5.5 million pounds for civilian feeding abroad; included in military.
$1 \overline{0} /$ Govermment stocks as reported in Cold Storage Report.
11/ Donations included.
12/ Preliminary.

Table 61.- Condensed and evaporated milk: Supply and distribution, 1909-52

$1 /$ Items covered: Evaporated milk, case goods, (unskdmed, unsweetened); condensed milk, case goods (unskdmmed sweetened) and for earlier years also unsweetened; condensed milk, bulk goods, unskimed sweetened and unsweetened. For years 1909-18, annual production estimates were interpolated on the basis of Census of Manufactures data for 1909 and 1914 and the BAE estimate for 1919. For the following years, the total output of these items was published by the Bureau of Agricultural Economics in Production of Manufactured Dairy Products. (Processed.) 2/ Manufacturers' stocks compiled from Evaporated, Condensed, and Dry Milk Report of the Bureau of Agricultural Economics (issued monthly, processed). They include stocks of condensed milk (case goods) and evaporated milk (case goods), both of which were first reported in 1920. Beginning 1949, cold storage holdings of bulk condensed whole milk, as reported in Cold Storage Report, Production and Marketing Administration, are included. $3 / 1909-41$, based on data reported by the Department of Commerce; 1942-46, from records of the Department of Agriculture and Department of Commerce; beginning 1947, as reported by the Department of Comerce. Beginning April 1948, trade with Hawail and Alaska is no longer reported. 4/Civilian per capita consumption only, beginning 1941. 5/Less than 0.5 million pounds. 6/ Includes 347 million pounds transferred to USDA and 4 million pounds transferred to UNRRA from military stocks in 1946. 7/ Preliminary.


1/ 1910-17, approximatod on basis of Consus of Manufactures data for 1914 and the Bureau of Agricultural Economice ostimates for 1918; 1918 to date, as reportod by the Bureau of Agricultural Economics in Production of Manufactured Dairy Products

2/ Manufacturers' stooks as published by Bureau of Agricultural Eoonomice in Evaporatod, Condensed, and Dry Milk Report
3/ 1920-31, the Departant of Cnmarce roportod a composito figure on exports of milk and croam, powdered or dried. Fnr this period, exports of whole milik wore assumed to be 57 percent of the reportod composite, the ratio which dry whole represented of the total of dry whole and dry skim in 1932-34. Likewise, shipmonts of dry whole for 1928-31 were assumod to be 39 percent of the combinod shipmonts of dried whole and shim nilk, the relationehip which prevailed when the itoms vere reportod eoparatoly in 1932-34. 1932-52, exports are those publishod by the Department of Commerce except for the period during World War II when this information was supplemented and partially replaced by data fram Department of Agriculture records.

[^15]Table 63.- Nonfat dry milk solids: Supply and distribution, 1920-52

:Million Million Million Million Million Million Million Million Million Million Million Million :pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds pounds Pounds

| 1920 | 27 | --- | --- | 27 | --- | 1 | -- | --- | --- | --- | --- | 26 | 0.2 |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| 1921 | 25 | --- | --- | 25 | --- | 4 | --- | --- | --- | --- | --- | 21 | . 2 |
| 1922 | 26 | --- | 1 | 27 | --- | 3 |  | --- | --- | --- |  | 24 | . 2 |
| 1923 | 40 | --- | 2 | 42 | --- | 1 | --- | --- | --- | --- | -- | 41 | 4 |
| 1924 | 45 | --- | 1 | 46 | --- | 2 | --- | --- | --- | - | --- | 44 | 4 |
| 1925 | 47 | --- | 4 | 51 | --- | 2 | --- | --- | --- | --- | --- | 49 | . 4 |
| 1926 | 60 | --- | 4 | 64 | --- | 1 | --- | --- | --- | --- | --- | 63 | . 5 |
| 1927 | 77 | --- | 3 | 80 | --- | 1 | --- | --- | -- | -- | --- | 79 | . 7 |
| 1928 | 96 | --- | 1 | 97 | --- | 2 | --- | --- | -.- | --- | --- | 95 | . 8 |
| 1929 | 135 | --- | 4/ | 135 | --- | 2 | --- | --- | --- | --- | --- | 133 | 1.1 |
| 1930 | lu9 | 17 | 4/ | 186 | 22 | 3 | --- | --- | --- | --- | --- | 161 | 1.3 |
| 1931 | 170 | 22 | 4 | 192 | 14 | 6 | --- | --- | --- | --- | --- | 172 | 1.4 |
| 1932 | 176 | 14 | 4 | 190 | 9 | 2 | --- | --- | --- | --- | --- | 179 | 1.4 |
| 1933 | 187 | 9 | 4 | 196 | 16 | 1 | --- | --- | --- | --- | --- | 179 | 1.4 |
| 1934 | 192 | 16 | 4 | 208 | 19 | 1 | --- | --- | --- | --- | --- | 188 | 1.5 |
| 1935 | 188 | 19 | $4 /$ | 207 | 6 | 1 | --- | --- | --- | --- | --- | 200 | 1.6 |
| 1936 | 224 | 6 | 20 | 250 | 22 | 2 | -- | --- | --- |  | --- | 226 | 1.7 |
| 1937 | 245 | 22 | 1 | 268 | 21 | 3 | --- | --- | --- | --- | - | 244 | 1.9 |
| 1938 | 289 | 21 | 4/ | 310 | 28 | 7 | --- | --- | --- | --- | --- | 275 | 2.1 |
| 1939 | 268 | 28 | 1 | 297 | 9 | 3 | --- | --- | --- | --- | --- | 285 | 2.1 |
| 1940 | 322 | 9 | 4/ | 330 | 26 | 10 | --- | --- | --- | --- | --- | 295 | 2.2 |
| 1941 | 366 | 26 | 4 | 392 | 19 | 8 | --- | 3 | 30 | 33 | 7 | 325 | 2.4 |
| 1942 | 565 | 19 | $4 /$ | 584 | 26 | 4 | 3 | 72 | 133 | 202 | 17 | 335 | 2.5 |
| 1943 | 510 | 26 | $4 /$ | 536 | 22 | 1 | 72 | 47 | 234 | 209 | 31 | 273 | 2.1 |
| 1944 | 583 | 22 | 4 | 605 | 38 | 1 | 47 | 96 | 220 | 269 | 104 | 193 | 1.5 |
| 1945 | 643 | 38 | 4/ | 681 | 14 | 5 | 96 | 2/ 74 | 193 | 171 | 243 | 248 | 1.9 |
| 1946 | 653 | 14 | $4 /$ | 667 | 39 | 12 | 5/ 74 | - 24 | 174 | 124 | 41 | 451 | 3.2 2.9 |
| 1947 | 678 | 39 | - | 717 | 15 | 72 | - 24 | 6/ 16 | 102 | 94 86 | 119 52 | 417 | 2.9 3.3 |
| 1948 | 682 | 15 | 3 | 700 | 44 | 33 | 6/ 16 | 17 | 85 53 | 86 | 52 134 | 485 | 3.3 3.2 |
| 1949 | 935 | 4.4 | 5 | 984 | 49 | 32 | 17 | 251 | 53 | 287 | 134 | 482 | 3.2 |
| 1950 | 881 | 49 | 3 | 933 | 22 | 25 | 251 | 263 | 311 | 323 | 0 | 7/549 | 3.6 |
| 1951 | 702 | 22 | 1 | 725 | 42 | 48 | 263 | 52 | 182 | -29 | 10 | 7 637 | 4.2 |
| 1952 8/ | 842 | 42 | 1 | 885 | 128 | 39 | 52 | 38 | 23 | 9 | 12 | 7 690 |  |

1/ Production for food uses, prior to 1935, based on proportion produced for food in 1936-40 applied to data on total output as reported by BAE for 1920-34. Beginning with 1935, data are as published by the Bureau of Agricultural Economics in Production of Manufactured Dairy Products. 2/ Marufactures s' stocks as renorted by bAE in Evaporated, Condensed, and Dry Milk Report. 3/For the jears 1920-31 the Department of Commerce reported a composite figure on milk and cream, powdered or dried. In this period, exports of dry akim milk were assumed to be 43 percent of the reportel composite, the portion which dry skim represented of the total of dry whole and dry skim in 1932-34. Likewise, shipments of dry whole for the period 1928-31 were assumed to be 61 percent of the combined shipmonts of dried whole and dried skim milk, the relationship which prevailed when the 1toms were reported separately in 1932-34. 1932-52, exports are those published by the Departmont of Commerce, except from the beginning of World War II when this information was supplemented and partially replaced by data from Department of Agriculture records. Imports are "imports for consumption" 4 Less than 500,000 pounds. 5/ Includes 12 million pounds transferred to UNRRA and PMA from military stocks in 1946. 6/ Includes 5 million pounds purchased by Dairy Products Marketing Association during 1947 and transferred to PMA during 1948. I/ Includes 10 million pounds sold domestically by USDA for animal feod in 1950; 17 million pounds in 1951; and 7 million pounds in 1952. 8/ Proliminary.


1/ The net amount of milr (equivalent) used in making ice croan (fat solids basis) has been oitimated amually begiming with 1916 by the Burean of Agricultural Eoonomios on the basis of total quantity of niil fat used in ice are included in the tables on buttor and evaporated in the form of butter and condensed whole milk. (Finese quantities duplication was made for the years prior to 1916 on basis of the magnitude of Apprarimate allowance fcir ithis quantity of 100 crean produced 1909-15.

2/ Output 1909-15 approximated on basis of Consus of Manufaotures for 1914 and revised BAF estimates for 1916-39; 1940-dato, as published by the Bureau of Agrioultural Fconomics in Production of Manufactured Dairy Products. 4.64 pounds in $1943,4.54$ pounds in 1944 to pounde assuning a gallon of 100 crean weighed 4.7 pounde through 1942 , 4.64 pounds in 1943, 4.54 pounds in $1944-45$, and inoreasing weights to 4.8 ponnde by 1952

3/Proliginary.
Table 65．－Total milk and fluid milk and cream：Supply and distribution，1924－52 1／

| Year | Supply |  |  |  | Distribution＿－ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Produc－$\vdots$$\vdots$tion$: \quad 2 /$ |  | Imports | Total supply | Fading camer－ cial stocks | $\begin{aligned} & \text { Camer- } \\ & \text { civer } \\ & \text { exports } \\ & \text { and } \\ & \text { ship- } \\ & \text { ments } \end{aligned}$ | Fed to calves | Other uses 3／ | Department of Agriculture |  |  |  |  | Total milk | nsumption： | $\frac{\text { Use as pluld milk and creem }}{\text { ：Civilian consumption }}$ |  |  |
|  |  |  |  |  |  |  |  |  | Begin－ ning stocks | Ending stocks | Delliv- eries |  | M111－ tary | Total | Per capita 4／ | $\begin{aligned} & \text { Mill- } \\ & \text { tary } \end{aligned}$ | Total | Per capita 5／ |
|  | $\begin{aligned} & \text { Million } \\ & \text { : pounds } \end{aligned}$ | Million pounde | Million pounds | Million pounde | Million pounds | Million pounds | Million pounds | M11lion pounds | Million pounds | Million pounds | M11110n pounds | Million pounds | Mililion pounds | Million pounds | Pounds | Billion pounds | Billion pounds | Pounds |
| 1924 | 93，660 | 1，650 | 1，388 | 96，698 | 2，261 | 830 | 2，742 | 40 | －－－ | －－－ | －－－ | －－－ | －－－ | 90，825 | 785 | －－－ | 38.9 | 336 |
| 1925 | 94，940 | 2，261 | 1，278 | 98，479 | 2，174 | 666 | 2，784 | 40 |  |  |  |  |  | 92，815 | 790 | －－－ | 39.6 | 337 |
| 1926 | 97，404 | 2，174 | 1，453 | 101，031 | 1，626 | 537 | 2，858 | 40 | －－－ |  |  | －－－ |  | 95，970 | 806 | －－－ | 40.2 | 338 |
| 1927 | 99，018 | 1，626 | 1，425 | 102，069 | 1，951 | 484 | 2，901 | 40 | －－－ | －－－ | －－－ | －－－ | －－－ | 96，693 | 801 | －－－ | 40.6 | 336 |
| 1928 | 99，367 | 1，951 | 1，254 | 102，572 | 2，154 | 519 | 2，944 | 60 | －－－ | －－－ | －－－ |  |  | 96，895 | 793 | －－－ | 41.2 | 337 340 |
| 1989 | ：102，133 | 2，154 | 1，123 | 105，400 | 3，037 | 512 | 3，012 | 60 | －－－ | －－－ | －－－ | － | － | 98，779 | 800 |  | 42.0 | 340 |
| 1930 | ：102，984 | 3，037 | 876 | 106，897 | 2，612 | 454 | 2，986 | 40 | －－－ | －－－ | －－－ | －－－ | －－－ | 100，805 | 808 | －－－ | 42.1 | 337 |
| 1931 | ：105，629 | 6／2，806 | 653 | 109，088 | 1，716 | 442 | 2，997 | －－－ |  |  | －－－ | －－－ |  | 103，933 | 826 |  | 42.1 | 335 |
| 1932 | ：106，310 | 1，716 | 571 | 108，597 | 1，561 | 339 | 2，859 | －－－ |  |  |  |  |  | 103，838 | 820 | －－－ | 42.9 | 339 |
| 1933 | ：107，162 | 1，561 | 476 | 109，199 | 3，816 | 293 | 2，878 | －－－ |  |  |  | －－－ |  | 102，212 | 803 | －－－ | 42.9 | 337 |
| 1934 | ：104，021 | 3，816 | 472 | 108，309 | 2，417 | 323 | 2，688 | －－－ |  | －－－ |  | －－－ | －－－ | 102，881 | 803 |  | 41.3 | 322 326 |
| 1935 | ：103，605 | 2，417 | 939 | 106，961 | 2，108 | 344 | 2，676 | －－－ | －－－ | －－－ | －－－ | －－－ | －－－ | 101，833 | 789 |  | 42.8 | 326 |
| 1936 | ：104，710 | 2，108 | 816 | 107，634 | 3，073 | 302 | 2，755 | －－－ | －－－ | －－－ | －－－ |  |  | 101,504 102,710 | 782 786 | －－－ | 42.8 | 330 331 |
| 1937 | 104，208 | 3，073 | 832 | 108，113 | 2，357 | 322 | 2，724 |  | －－－ |  | －－－ | －－－ |  | 102，710 | 786 | －－－－ | 43.2 43.3 | 331 329 |
| 1938 | ：108，107 | 2，357 | 551 | 111，015 | 4，456 | 374 | 2，850 |  |  |  | －－－ |  | －－－ | 103，335 | 785 813 | －－－－ | 43.3 44.1 | 329 |
| 1939 | ：108，992 | 4，456 | 587 | 214，035 | 2，724 | 418 | 2，967 | －－－ | －－－ | －－－ | －－－ | －－－ |  | 107，926 | 813 |  |  | 332 |
| 1940 | 111，512 | 2，724 | 337 | 124，573 | 2，677 | 742 | 2，994 |  | －－－ | －－－ | －－－ | －－ | －－－ | 108，160 | 807 | －－－ | 44.3 | 331 |
| 1941 | ：117，088 | 2，677 | 272 | 120，037 | 4，881 | 994 | 3，124 | －－－ | －－－ | 743 | 1，998 | 2，741 | 2，497 | 105，800 | 791 | 0.4 | 44.7 | 334 |
| 1942 | ：120，433 | 4，881 | 632 | 125，946 | 2，022 | 507 | 3，294 | －－－ | 743 | 1，978 | 4，203 | 5，438 | 5，254 | 109，431 | 821 | ． 9 | 47.2 | 354 |
| 1943 | ：118，517 | 2，022 | 299 | 120，838 | 2，283 | 314 | 3，276 | －－－ | 1，978 | 4，665 | 5，072 | 7，759 | 10，579 | 96，627 | 740 | 1.7 | 48.5 | 371 |
| 194 | ：118，123 | 2，283 | 126 | 120，532 | 1，791 | 378 | 3，258 |  | 4，665 | 1，010 | 6，466 | 2，811 | 14，291 | 98，003 | 752 | 1.7 | 49.6 | 381 |
| 1945 | ：120，628 | 1，791 | 169 | 122，588 | 1，815 | 708 | 3，290 | －－－ | 1，010 | 2，391 | 4，461 | 5，842 | 9，221 | 101，712 | 777 | 1.3 | 52.2 | 399 |
| 1946 | ：118，697 | 1，815 | 342 | 120，854 | 2，729 | 1，223 | 3，228 | －－－ | 2，391 | 190 | 4，861 | 2，660 | 2，256 | 108，758 | 775 | ． 7 | 54.6 | 389 |
| 1947 | ：118，114 | 2，729 | 166 | 121，009 | 2，668 | 3，723 | 3，194 |  | 190 | 15 | 698 | 523 | 1，319 | 109，582 | 758 | ． 4 | 53.3 | 369 |
| 1948 | ：113，671 | 2，668 | 232 | 116，571 | 3，598 | 2，717 | 3，064 |  | 15 | ${ }^{2}$ | 285 | 272 | 1，877 | 105，043 | 714 | .4 4 | 52.3 52.6 | 355 352 |
| 1949 | ：117，003 | 6／3，612 | 312 | 120，927 | 2，986 | 2，575 | 3，163 | －－－ | 2 | 2，370 | 96 | 2，464 | 1，396 | 108，343 | 724 | ． 4 | 52.6 | 352 |
| 1950 | ：117，302 | 2，986 | 545 | 120，833 | 3，132 | 1，203 | 3，286 | －－－ | 2，370 | 1，639 | 1，005 | 274 | 1，618 | 111，320 | 731 | ． 5 | 53.2 | 349 |
| 1951 | ：115，341 | 3，132 | 579 | 119，052 | 3，537 | 1，610 | 3，450 | －－－ | 1，639 | 70 | 862 | －707 | 2，910 | 108，252 | 707 | ． 9 | 53.9 | 352 |
| 1952 7／ | ：115，517 | 3，537 | 788 | 119，842 | 4，872 | 908 | 3，348 | －－－ | 70 | 199 | 10 | 139 | 2，734 | 107，841 | 694 | ．9 | 54.7 | 352 |

$\frac{1}{2}$ Milk equivalent of milk and cream and manufactured dairy products，including butter，computed on basis of fat content． Production on farms plus allowance for milk produced by cows not on farms．

[^16]4／Milk equivalent of butter used in making margarine．for total milk from 1909－23 are as follows：

5／Approximations to the per capita consumption levels for fluid miks and cream fram 1909－23 are as follows：

##  <br>  <br> 太内人్ન 太్ન

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$\begin{array}{llll}1915 & \ldots & 318 & \text { pounds } \\ 1916 & \ldots & 315 & \text { pounds } \\ 1917 & \ldots . & 328 & \text { pounds }\end{array}$
6／Cold－storage holdings of cream included beginning January 1，1931；condensed milk（bulk）beginning January 1 ， 1949.
7／Preliminary．



[^17]Table 67.- Total dairy products, nonfat solids basis: Supply and distribution, 19e4-52 1/




 cream beginning Jamuary 1, 1931 and condensed milk (bulk) beginning Jamuary 1, 1949. 4/ Preliminary.

| : |  | Supp |  | : |  |  |  |  | Distribut | 10n |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| : |  | : | : |  |  |  |  | rtment of | Agricult |  |  | Damesti | c disap | pearance |
| Year |  | $\begin{gathered} \text { Begin- : } \\ \text { ning }: \end{gathered}$ |  |  | Ending | cial | : | - |  | Net | Use in |  | Civi | 1ian |
| : |  | ```cammer-: cial stocks 2/``` | Imports: <br> 3/ | Total <br> supply | $\begin{gathered} \text { commer-: } \\ \text { cial } \\ \text { stocks } \\ 2 / \end{gathered}$ |  | $\begin{aligned} & \text { Begin- } \\ & \text { ning } \\ & \text { stocks } \end{aligned}$ | Ending stocks | Deliveries | pur- <br> chases <br> for export | rine $4$ | Military | Total | $\begin{aligned} & : \text { Per } \\ & \text { : cepita } \end{aligned}$ |
| : | : | - | : |  |  | : M11110 |  |  | Millian | Million | M11100 | M1710n | M11110n |  |
| : | Million pounds | Million pounds | Killion pounds | Million pounds | M11110n pounds | Million pounds | Million pounds | Million pounds | Millian pounds | pounds | pounds | pounds | pounds | Pounds |
| 1909 | 1,622 | --- | 1 | 1,623 | --- | 6 | --- | --- | --- | --- | 6 | --- | 1,611 | 17.5 |
| 1910 . |  |  |  |  |  |  |  |  |  |  | 6 | --- | 1,695 | 18.1 |
| 1910 : | 1,706 | - | 1 | 1,707 | --- | 6 | --- | --- |  |  | 6 | --- | 1,748 | 18.4 |
| 1911 : | 1,762 | --- | 1 | 1,763 | --- | 9 | --- | --- | --- | --- | 6 | --- | 1,579 | 16.3 |
| 1912 : | 1,592 | --- | 1 | 1,593 | --- | 8 | --- | --- | -- |  | 6 | -- | 1,600 | 16.2 |
| 1913 : | 1,608 | --- | 4 | 1,612 | --- | 6 | --- | --- | --- | --- | 6 | -- | 1,680 | 16.7 |
| 1914 : | 1,685 | --- | 7 | 1,692 | --- | 7 | --- | --- | --- | -- | 5 | -- | 1,729 | 17.0 |
| 1915 : | 1,751 | --- | 2 | 1,753 | --- | 21 | --- | --- | --- | --- | 3 |  | 1,763 | 17.1 |
| 1916 : | 1,793 | 49 | 1 | 1,843 | 46 | 31 | --- | --- | --- | --- | 4 | ---- | 1,625 | 15.5 |
| 1917 : | 1,644 | 46 | 1 | 1,691 | 51 | 11 | --- | --- | --- | --- |  | --- | 1,477 | 13.9 |
| 1918 : | 1,503 | 51 | 1 | 1,555 | 44 | 29 | --- | --- | --- | --- | 6 | -- | 1,600 | 15.0 |
| 1919 : | 1,647 | 44 | 7 | 1,698 | 54 | 38 | --- | --- | --- | --- | 6 | -- |  | 15.0 |
| 1920 | 1,574 | 54 | 38 | 1,666 | 59 | 21 |  | --- | --- | --- | 4 | --- | 1,582 | 14.6 |
| 1921 | 1,748 | 59 | 18 | 1,825 | 48 | 12 | --- | --- | --- | --- | 1 | --- | 1,764 | 16.0 |
| 1922 | 1,870 | 48 | 7 | 1,925 | 27 | 15 | --- | --- | --- | --- | 1 | --- | 1,882 | 16.9 |
| 1923 | 1,993 | 27 | 21 | 2,041 | 30 | 10 | --- | --- | --- | --- | 2 | --- | 1,999 | 17.6 |
| 1924 : | 2,066 | 30 | 19 | 2,115 | 66 | 12 | --- | --- | --- | --- | 2 | --- | 2,035 | 17.6 |
| 1925 | 2,082 | 66 | 7 | 2,155 | 53 | 8 | --- | --- | --- | --- | 2 | --- | 2,092 | 17.8 |
| 1926 | 2,132 | 53 | 7 | 2,192 | 34 | 8 | --- | --- | --- | --- | 2 | --- | 2,148 | 18.1 |
| 1927 | 2,188 | 34 | 8 | 2,230 | 46 | 7 | --- | --- | --- | --- | 2 | --- | 2,175 | 18.0 |
| 1928 | 2,120 | 46 | 4 | 2,170 | 44 | 8 | --- | --- | --- | --- | 3 | --- | 2,115 | 17.3 |
| 1929 | : 2,184 | 44 | 3 | 2,231 | 88 | 8 | --- | --- | --- | --- | 3 | --- | 2,138 | 17. |
| 1930 | 2,149 | 82 | 3 | 2,234 | 63 | 7 | --- | --- | --- | --- | 2 | --- | 2,162 | 17.3 |
| 1931 | 2,239 | 63 | 2 | 2,304 | 27 | 7 | --- | --- | --- | --- | $5 /$ | --- | 2,270 | 18.0 |
| 1932 | - 2,307 | 27 | 1 | 2,335 | 22 | 7 | --- | --- | --- | --- | $5 /$ | --- | 2,306 | 18.2 |
| 1933 : | - 2,375 | 22 | 1 | 2,398 | 111 | 6 | --- | --- | --- | --- | $5 /$ | --- | 2,281 | 17.9 |
| 1934 | - 2,286 | 111 | 1 | 2,398 | 47 | 6 | --- | --- | --- | --- | $5 /$ | --- | 2,345 | 18.3 |
| 1935 | - 2,211 | 47 | 23 | 2,281 | 40 | 7 | --- | --- | --- | --- | 5 | --- | 2,234 | 17.3 |
| 1936 | 2,168 | 40 | 10 | 2,218 | 61 | 6 | --- | --- | --- | --- | --- | --- | 2,151 | 16.6 |
| 1937 | : 2,135 | 61 | 11 | 2,207 | 43 | 6 | --- | --- | --- | --- | --- | --- | 2,158 | 16.5 |
| 1938 | : 2,252 | 43 | 2 | 2,297 | 129 | 8 | --- | --- | --- | --- | --- | --- | 2,160 | 16.4 |
| 1939 | : 2,210 | 129 | 1 | 2,340 | 55 | 9 | --- | --- | --- | --- | --- | --- | 2,276 | 17.2 |
| 1940 | : 2,240 | 55 | 1 | 2,296 | 41 | 11 | --- | --- | --- | --- | --- | --- | 2,244 | 16.7 |
| 1941 | : 2,268 | 41 | 4 | 2,313 | 114 | 13 | --- | --- | --- | --- | --- | 70 | 2,116 | 15.8 |
| 1942 | : 2,130 | 114 | 20 | 2,264 | 6/24 | 9 | --- | 1 | 14 | 15 | --- | 124 | 2,092 | 15.7 |
| 1943 | : 2,015 | 6/24 | 3 | 2,042 | 7/35 | 6 | 1 | 123 | 88 | 210 | --- | 266 | 1,525 | 11.7 |
| 1944 | : 1,818 | 7/35 | 2 | 1,855 | 8/21 | 6 | 123 | 7 | 91 | -25 | --- | 321 | 1,532 | 11.8 |
| 1945 | : 1,699 | 8/21 | 4 | 1,724 | 9/28 | 10/8 | 7 | 11/13 | 10/47 | 53 | --- | 222 | 1,413 | 10.8 |
| 1946 : | - 1,502 | 9/28 | 7 | 1,537 | 23 | 10/6 | 11/13 | --- | 10/11 | -2 | --- | 54 | 1,456 | 10.4 |
| 1947 : | : 1,640 | 23 | 4 | 1,667 | 22 | 1017 | --- | --- | --- | --- | --- | 28 | 1,600 | 11.1 |
| 1948 : | : 1,504 | 22 | $5 /$ | 1,526 | 32 | 8 | --- | --- | --- | --- | --- | 36 | 1,450 | 9.9 |
| 1949 : | : 1,688 | 32 | 5 | 1,720 | 26 | 6 | --- | 12/107 | --- | 107 | --- | 32 | 1,549 | 10.4 |
| 1950 : | : 1,648 | 26 | $5 /$ | 1,674 | 39 | 5 | 12/107 | 13/66 | 14/23 | -18 | --- | 34 | 1,614 | 10.6 |
| 1951 : | 1,452 | 39 | 5 | 1,491 | 24 | 4 | 13/66 | 13/3 | IT/20 | -43 | --- | 53 | 1,454 | 9.5 |
| 1952 15/: | : 1,435 | 24 | 5 | 1,459 | 64 | 2 | 13/3 | 13/9 |  | 6 | --- | 38 | 1,349 | 8.7 |

1/ 1909-16, estinates of total butter production were based on data of Census of Manufactures, Census of Agriculture, and market receipts. 1917-38, annual estimates of factory production based an data from Census of Mamufactures, State Departments of Agriculture, and fram data received by the Bureau of Agricultural Economics directiy from creameries; 1939-date, data are as published by BAB in Production of Manufactured Dairy Products. Farm butter production, 1917-23, estimated primarily from Census of Agriculture and from 1924-date fram reports by farmers, in addition to Census data, and published by BAB. Data prior to 1909 available in U. S. Departanent of Agriculture Technical Bulletin No. 722, Production and Consumption of Manufactured Dairy Products. 2/ Stock data cover quantities in camercial storage warehouses, reparted beginning 1916 in Cold Storage Report, Production and Marketing Administration. 3/ Imports, exports, and shipments are those published by the Department of Comerce, except for the period during World War II when this information was supplemented and partially replaced by data fram Department of Agriculture records. Imports prior to 1918 were "general imports," while for 1918 and following years they are "imports for consumption." Shipments to Alaska and Hawail excluded starting with April 1948. 4/Use of butter in margarine prior to 1914 estimated; 1914-16 and beginning 1920 fram Bureau of Internal Revenue; 191 i-19 (fiscal year data), fram Institute of Margarine Manufacturers. $5 /$ Less then 500 , 000 poinds. 6/ Cold-storage stocks of 25 million pounds include about 1 miliion pounds owned by Department of Agriculture and the Armed Forces. T/ Total of 35 miliion pounds includes approximately 30 million pounds in cold storage and 5 million pounds outside cold storage. Cold-storage figure of 155 million pounds includes about 125 miliion pounds of Department of Agriculture and military stocks. $8 /$ Cold-storage total of 60.5 million pounds includes approximately 39.6 mililion pounds of Department of Agriculture and military stocks. 9/ Includes 3 million pounds in process of transfer as of January 1 from military holdings to civilian channels via Production and Marketing Administration. 10/ Includes butter equivalent of butter spread and butter oil. $11 /$ In process of transfer from the military as of January l. $12 /$ Includes 10 million pounds for distribution to School Lunch Program in 1950 . $13 / \mathrm{Govern}$ ment stocks as reported in Cold Storage Report. 14/Donations included. 15/ Preliminary.


1/ See text on fats and oils in chapter 1 for sources and methodology.
2/ Includes voluntary reliof shipmente beginning in 1947
3/ Includes stocks in transit.
4. This represents only lard used as such. Civilian sonsumption based on unrounded data.

5/ Includes procurement for civilian relief feeding-in occupied areas.
6/ Civilian only, 1941 to date.
7/ Not available.
8/ Lese than 500,000 pounde.
9/ Small quantity of imports included with shortening.
10 Includes lard in tashonka.
11/ Preliminary.

Table 70.- Margarine (actual weight): Supply and distribution, 1909-52 1/

$\frac{1}{2} /$ See text on fats and oils in chapter 1 for sources and methodology.
$\overline{2} /$ Includes voluntary relief shipments beginning in 1947.
$\frac{3}{4}$ Includes some procurement for civilian relief feeding in occupied areas.
4/ Civilian only, 1941 to date.
5 Less then 500,000 pounds.
6) Stocks reported by Bureau of the Census beginning 1950.

7/ Preliminary.

Table 71.- Shortening: Supply and distribution, 1912-52 1/


1/ See text on fats and oils in chapter 1 for sources and methodology.
2/ Includes voluntary relief shipments beginning in 1947 .
3/ Includes some procurement for civilian relief feeding in occupied areas.
4/ Based on unrounded data.
5/ Civilian only, 1941 to date.
$6 /$ Not available.
7/ Less than 500,000 pounds.
8/ Includes a small quantity of lard, but totals less than 500,000 pounds.
9 Includes a small quantity of lard.
10/ Includes 4 million pounds shortening content of rations in process of transfer by Army to UNRRA.
II. Includes 31 million pounds shortening content of rations transferred by Army to UNRRA in 1945.

12/ Preliminary.


1/This category includes fats and oils used in such products as cooking and salad oils, in salad dressing, mayonnaise, baked goods. See text of chapter 1 for details on sources of data and methodology. 2/ Includes the following oils: cottonseed, peanut, soybean, corn, sunflower,
 for crushing abroad. 3/ Includes primary oils, secondary or processed oils, and oil equivalent of mayonnaise. $4 / \mathrm{Mainly}$ coconut, palm, palm kernel, and babassu. During 1942, 1943, 1944 , and 1945 also includes same linseed oil exported to Russia for food. $5 /$ Includes same linseed oil exported to Russia for food during World War II. 6/ Includes some procurement for civilian relief feeding in occupied areas. I/ Based on unrounded data. 8/Civilian only, 1941 to date. $9 /$ Beginning 1942 includes stocks of sunflower and tea seed oils not reported separately in preceding years. $10 /$ Beginning 1944 includes stocks of secondary or processed edible oils not previously reported by the Bureau of the Census. 11/ Preliminary.

Table 73.- Total food fats and oils (fat content basis): Supply and distribution, 1931-52


[^18]Table 74.- Fruits used fresh: Supply and distribution, 1909-52


Table 74.- Fruits used fresh: Supply and distribution, 1909-52 -Continued


Table 74.- Fruits used fresh: Supply and distribution, 1909-52 -Continued



[^19]2/ Includes oranges, grapefruit, lemons, limes, and tangerines. 1909-40, calendar years; 1941-48, crop years beginning October or November of year prior to that indicated.
3/ Preliminary
4/ Production figures include apples for sale for fresh use and quantities used in farm households; datal for 1909-38 cover total apple production; newer series for 1934 to date includes apple production in commer cial areas only. Stock data for 1909-38 include apples in cold and common storage; data for 1934 to date include apples in cold storage only.
5/ Includes apricots, avocados, bananas, cherries, cranberries, figs, grapes, peaches, pears, pineapples, plums, prunes, and strawberries.
6) Includes an estimate for pineapple inshipments.

7/ Apples, citrus fruits, and other fruits used fr
the data for apples produced in comercial areas only (see note 4). A, and C). Beginning l934 includes

Table 75 .- Canned fruits: Supply and distribution, pack years 1909 to 1942 and calendar years 1943 to 1952 1/


1/ Includes apples, applesauce, apricots, berries, cherries (including brined), cranberries, figs, fruit cocktail and salad, citrus segments, ollves (including brined), peaches, pears, pineapple, plums, and prunes.

2/ From 1909 through 1942 data are on a pack-year basis beginning as follows: Apricote, berries, sweet cherries, cocktail and salad, peaches, and pears begiming June 1; red sour pitted cherries, July l; fige, August 1; apples and applesauce, cranberries, plums and prunes, Septomber 1; grapefruit, November 1. Beginning 1943, data are on a calendar-year basis.
3/ Prior to 1934 includes only packers' stocks of the major canned fruits. 1934-47, includes packers' and wholesale distributors' stocks from reports of Departmont of Commerce for all commoditios oxcept olives. Beginning 1948, data on packers' stocks from Fational Canners Asscoiation, Florida Camors Association, and Canners loague of Callfornia; data on wholesale distributors' atocks for all major 1 tems from Department of Commorce. Prior to 1952 differences between onding stocks in one year and beginning stocks in the noxtyear arose from changes in coverage of available data; begiming 1992 wholesale distributors' stocks are based on a revised sample of firme selectod from the 1948 Census of Business list. For oach yoar beginning and ending stocks are comparable.
4/ Bogiming 1941, data exclude shipmonts by United States Department of Agriculture for lend-lease, UNRRA and othor programs. Beginning April 1948, shipmonts to and from Havail and Alaska are estimatod.
5/ Includes quantities procured for military civilian feoding.
6/ Civilian per capita consumption only, 1941 to date.
7/ Includes purchases of camed pineapple by our Armed Forces outaide the United States since all shipmente considerod for civilian use; 1943, 281 million pounds; 1944, 251; 1945, 108.
8/ Includes the following quantities procured by military agencies and subsequently transferred to nomilitary agencies: 9 million pounde in 1944, 73 in 1945, and 19 in 1946.
9/ Includes quantities traneferred from military agencies to URRRA: 55 million pounds in 1945, 2 million in 1946.
10/ Proliminary.

Table 76.- Canned fruit juices (excluding frozen): Supply and distribution; 1910-52 l/


1/ 1910-28, erape juice only; data for citrus juices begin in 1929; data on othor noncitrus Juices (apples, berry, nectars, pineapple, and prune) begin in 1934. Grape juice data are on a pack year 1910-33 and 1948 to dato beginning November of year prior to that indicatod; data on citrus juices are on a pack year beginning November prior to year indicatod and include concentrated juices oonverted to a single-strongth basis.

2/ Differences botween ending atooks in 1933, 1935, 1938, 1946, 1947 and begiming stocks in the following yoar are due to ohange in coverage of available data. Data not available for noncitrus juices aftor 1947. For each year beginning and ending stocks are comparablo.

3/ Shipmonts to and from Havail and Alaska aftor March 1948 are estimatod, using somo trade data.
4/ Civilian per capita oonsumption only, beginning 1941.
5/ Less than 0.5 million pounds.
6/ Includos 103 million pounds traneferred from military stooks in 1946.
I/ Inoludes 86 million pounds shipped to UERRA in 1946 and 1 million in 1947.
8/ Includes 91 million pounde for military oivilian fooding.
2/ Proliminary.

Table 77.- Frozen fruits and fruit juices: Supply and distribution, 1925-52

| (Product neight.) |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
| Supply |  |  |  |  | Distribution |  |  |  |  |
| Year |  | Beginning : commercial: stocks 2/ |  | : $\quad \begin{aligned} & \text { : } \\ & : \\ & :\end{aligned}$ | Ending : Commercial commercial:exports and stocks 2/ : shipments |  | Domestic disappearance |  |  |
|  |  |  |  |  |  |  | :Military | Civilian | Per capita $3 /$ |
|  | :Mil.1b. | Mil.1b. | Mil.1b. | Mil.1b. | Mil.1b. | Mil.1b. | Mil.1b. | Mil.1b. | Lb. |
| 1925 | : 13 | 34 | - | 47 | 24 | -- | -- | 23 | 0.2 |
| 1926 | : 42 | 24 | - | 66 | 51 | --- | --- | 15 | . 1 |
| 1927 | : 37 | 51 | --- | 88 | 55 | -- | -- | 33 | . 3 |
| 1928 | : 75 | 55 | -- | 130 | 69 | --- | --- | 61 | . 5 |
| 1929 | 57 | 69 | --- | 126 | 55 | -- | --- | 71 | . 6 |
| 1930 | : 85 | 55 | - | 140 | 75 | --- | -- | 65 | . 5 |
| 1931 | : 68 | 75 | -- | 143 | 92 | - | -- | 51 | . 4 |
| 1932 | : 60 | 92 | - | 152 | 74 | - | --- | 78 | . 6 |
| 1933 | : 50 | 74 | -- | 124 | 60 | --- | - | 64 | . 5 |
| 1934 | : 65 | 60 | - | 125 | 63 | -- | -- | 62 | . 5 |
| 1935 | : 77 | 63 | 5 | 145 | 81 | -- | --- | 64 | - 5 |
| 1936 | : 70 | 81 | 6 | 157 | 71 | -- | - | 86 | . 7 |
| 1937 | : 111 | 71 | 9 | 191 | 125 | -- | -- | 66 | . 5 |
| 1938 | : 129 | 125 | 4 | 258 | 126 | -- | $\cdots$ | 132 | 1.0 |
| 1939 | : 141 | 126 | 9 | 276 | 128 | -- | - | 148 | 1.1 |
| 1940 | : 173 | 128 | 11 | 312 | 143 | -- | -- | 169 | 1.3 |
| 1941 | - 208 | 143 | 4 | 355 | 178 | -- | -- | 177 | 1.3 |
| 1942 | - 196 | 178 | 3 | 377 | 188 | -- | 6 | 183 | 1.4 |
| 1943 | - 193 | 188 | 4 | 385 | 227 | -m | 13 | 145 | 1.1 |
| 1944 | : 338 | 227 | 4 | 569 | 268 | -- | 42 | 259 | 2.0 |
| 1945 | : 447 | 268 | 5 | 720 | 376 | --- | 46 | 298 | 2.3 |
| 1946 | : 530 | 376 | 4 | 910 | 471 | -- | 3 | 436 | 3.1 |
| 1947 | - 354 | 471 | 5 | 830 | 369 | - | 3 | 458 | 3.2 |
| 1948 | - 405 | 369 | 4 | 778 | 336 | - | 7 | 435 | 3.0 |
| 1949 | : 488 | 336 | 7 | 831 | 301 | 1 | 11 | 518 | 3.5 |
| 1950 | : 785 | 301 | 91 | 1,095 | 436 | 1 | 15 | 643 | 4.2 |
| 1951 | : 802 | 436 | 91 | 1,247 | 496 | 1 | 31 | 719 | 4.7 |
| 19524 | $W: 1,008$ | 496 | 131 | 1,517 | 455 | 9 | 38 | 1,015 | 6.5 |

1/ Commercial production only; excludes quantities frozen by industrial users such as hotels, bakeries, and confectioners. Data for 1925-41 from Western Canner and Packer. Since 1942 all data except miscellaneous fruits and fruit juices and citrus juices from National Association of Frozen Food Packers; data on miscellaneous fruits and fruit juices and citrus juices are based on reports of various canners associations and survey of citrus industry in California-Arizona by United States Department of Agriculture.

2/ Derived from cold storage reports of the Production and Marketing Administration, issued monthly by the U. S. Department of Agriculture, processed.

3/ Civilian per capita only, 1941 to date.
4/ Preliminary.

Table 78.- Dried fruits: Supply and distribution, pack years, 1909-52 1/


1/ Includes apples, apricots, dates, figs, peaches, pears, prunes, raisins, currants and other dried grapes. Excludes umerchantable figs beginning 1927 and substandard prunes beginning 1929. Pack years begin mid-year.

2/ Pack statistics were obtained mainly from the Crop Reporting Board, Dried Fruit Association of Californis, Giamini Foundation of Agricultural Economics, and trade publication, Western Canner and Packer. Production data on dates not available until 1916.

3/ Packers' stocks only 1920-41 pack years, compiled from reports of the Giannini Poundation of Agricultural Economics. For the $1942-45$ pack years stocks include both packers' and wholesale distributors' holdings obtoined fran the U. S. Department of Camerce. Beginning with the 1946 pack year only packers' stocks were available, estimated by the Production and Marketing Administration. Differences between ending stocks for both lgel and l929, end opening stocks of the respective following year is a result of an increase in the comodity coverage.

4 Derived from foreign trade reports, U. S. Department of Comerce. For commercial exports and imports, the data are on a July-June fiscal -year basis through 1939-40; information on comercial shipments to noncontiguous territories are available beginning 1929 and are on a July-June fiscal-year basis up to 1940. Fran 1940 to date commercial exports and shipments are on a September-August year. Where Ccmarce data included lend-lease or civilian feeding or UNRRA, these were deducted using Comerce figures. From this figure USDA exports other than lend-lease and civilian feeding and UIRRA (except Red Cross which was not reported by Commerce) were deducted.

5/ Civilian per capita only, beginning 1941.
6/ Includes 3 million pounds transferred in $1944-45$ by military to nonmilitary agencies.
$7 /$ Adjusted to exclude quantities transferred to nonmilitary agencies: 1943, 3 million pounds; 1944, 42 million pounds; 1945, 2 million pounds.

8/ Includes 42 mililion pounds transferred by military in 1945-46.
9 Includes 2 million pounds transferred by military. Beginning stocks for 1946-47 exclude distributoris, since these are not available for ending stocks.

10/ Includes quantities for civilian feeding in areas occupied by our Armed Forces: 1947, 372 million pounds; 1948, 86 million pounds; 1949, 90 million pounds. 11/Preliminary.

Table 79.- Vegetables, commercial for fresh market: Supply and distribution, 1909-52 1/


1/ Includes all vegetables and melons grown primarily for fresh sale, except potatoes and sweetpotatoes.
Excludes produce of farm and nonfarm hame gardens.
2/Estimated total comercial production for all States and for all vegetables for fresh market, including greenhouse production. For a few crops, includes production for processing. See note 5/.

3/ Includes stocks as follows: Onions, beginning 1919 (including cold storage stocks, 1946 to date); all Danish cabbage, 1982-39; Hew York Danish cabbage, 1940 to date.

4 Beginning 1938 includes shipments from Puerto Rico.
5 Includes estimated quantities of all vegetables used for dehydrating and of broccoli, brussel sprouts, carrots, cauliflower, and spinach (except in principal processing States) for processing; such quantities are not covered in the reported data on camercial production of vegetables for processing. Includes shrinkage and loss after harvest for onions only.

6/ Shipwents to Hawail not reported since March 1948.
7/ Civilian consumption only, beginning 1941.
8 Includes shipuents by the Department of Agriculture.
9 Includes estimate of shipwents to Hawail for April to December 1948 .
10/ Preliminary.

Table 80.- Canned vegetables, commercial pack: Supply and distribution, pack years, 1909-42, calendar years, 1943-52 $1 /$ (Net canned weight)


1 Includes asparagus, lima beans, snap beans, beets, carrots, corn, peas, pickles, pimientos, potatoes, pumpkin and squash, sauerkraut, spinach, sweetpotatoes, tomatoes, tomato and combination vegetable juice containing 70 percent or more tomato juice, tamato pulp, catsup, paste, sauce, and chili sauce, other greens, and mixed vegetables. Excludes baked beans, soups, and baby foods.

2/ Fram 1909 to 1942 data are on a pack-year basis beginning in the year indicated. Beginning 1943 the statistics are on a calendar-year basis.

3/ Derived from data of the National Canners Association, the Census of Manufactures, and the U. S. Departments of Agriculture and Commerce. See discussion processed vegetables in chapter 1.

4/ Includes canners' stocks beginning 1921 (prior to 1933, estimates are for major items only) and wholesale distributors' stocks beginning 1934. Canners' stock data were derived mostly fram reports of the National Canners Association; wholesale distributors' stocks from U. S. Department of Commerce. The differences between ending stocks and beginning stocks in the following year arose from changes in coverage of available data. For each year, beginning and ending stocks are camparable.

5/ Beginning 1941, data exclude shipments by USDA for lend-lease, UNRRA, and other programs.
6/ Compiled from the records of the U. S. Department of Agriculture. Includes lend-lease, UiRRA and other programs. The data have been adjusted to include transfers from military stocks to the UNRRA progran in the years 1945-47.

7/ Data exclude transfers to UNRRA and other nomalitary accounts, adjusted to year procured. Data for 1941 and 1942 are estimates based on fragmentary information.

8/ Civilian consumption only, beginning 1941.
9/ Includes the following quantities transferred from military agencies to UNRRA' and other nomilitary agencies: $19 \ln 4$, 57 million pounds; 1945, 125 million pounds; 1946, 6 million pounde.

10/ Includes 24 million pounds shipped to URRRA during 1945 and 96 million pounds shipped in 1946.
11/ Preliminary.

Table 81.- Canned baby foods: Supply and distribution, 1934-52


1/ Data from 1934 to 1947, based on reports of the U. S. Department of Coumerce; beginning 1948, data are derived from reports of the National Canners Association. Stock figures include canners' and wholesale distributors' through 1946; thereaftior, canners! stocks only.

2/ Civilian per capita beginning 1941.
3/ Preliminary.

Table 82.- Canned soups: Supply and distribution, 1935-46

| Year | Sucply |  |  | Distribution |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | $\begin{aligned} & \text { : Prom } \\ & \text { : duction } \\ & : 1 / \end{aligned}$ | $\begin{aligned} & \text { Beginning: } \\ & : \text { coumer } \quad \\ & \text { cial } \\ & : \text { stocks } 1 /: \end{aligned}$ | Total | $\begin{gathered} \text { Ending } \\ \text { coumer } \\ \text { cial } \\ \text { ctocks } \end{gathered}$ | $\begin{aligned} & \hline \text { Commer- } \\ & \text { cial } \\ & \text { exports } \\ & \text { and } \\ & \text { shipments: } \end{aligned}$ | USDA delif eries | Military | civilian | Per capita 2/ |
|  | : Mil.lb. | Mil.1b. | Mil.1b. | Mil.1b. | Mil.1b. | Mil.1b. | Mil.1b. | Mi1.1b. | Pounds |
| 1935 | 552 | 129 | 681 | 213 | 4 | - | - | 464 | 3.6 |
| 1936 | 600 | 213 | 813 | 267 | 5 | - |  | 541 | 4.2 5.0 |
| 1937 | 666 | 267 | 933 | 270 | 6 |  |  | 705 | 5.4 |
| 1938 | 720 | 270 | 990 | 279 | 6 |  |  | 835 | 6.4 |
| 1939 | 885 | 279 | 1,164 | 315 | 14 |  |  | 802 | 6.7 |
| 1940 | 900 | 315 | 1,215 | 303 | 10 |  |  |  | 6.9 |
| 1941 | : 1,035 | 303 | 1,338 | 407 | 14 | - |  | 977 | 6.9 |
| 1942 | : 840 | 407 | 1,247 | 258 | 14 |  | 10 | 978 | 7.3 5.3 |
| 1943 | 675 | 258 | 933 | 227 | 9 | 1 | 10 | 886 | 3.3 6.6 |
| 1944 | : 890 | 227 | 1,117 | 226 | 13 | 3 | 10 | 865 | 7.4 |
| 1945 | : 977 | 226 | 1,203 | 210 | 14 | 1 | 10 | + 968 | 7.4 |
| 1946 | : 1,434 | 210 | 1,644 | 399 | 24 |  | 4 | 1,217 | 8.7 |

I/ Derived from data of the U. S. Department of Comerce. See text, chapter 1, for details. No data reported since 1946. 2/ Civilian per capita beginning 1941.

Table 83.- Frozen vegetables: Supply and distribution, 1937-52 //


I/ Includes asparagus, snap beans, lima beans, broccoli, Brussels sprouts, carrots, cauliflour, corn-cut, corn-on-cob, peas, peas and carrots (mixed), rhubarb, spinach, squash, succotash, and miscellaneous vegetables. 2/ Pack data, 1937 through 1943, compiled from Western Camer and Packer; beginning 1944 data from National Association of Frozen Food Packers. 3/Stock data from Cold Storage Reports of Production and Marketing Administration, U. S. Department of Agriculture. Monthly. (Processed). 4/ Civilian per capita beginning 1ghl. 5/ Preliminary.

Table 84 .- Potatoes: Supply and distribution, calendar years, 1909-52


1/ Includes merchantable otocks in hands of growers and local dealers in areas where produced plus seed saved for use on farms where grown and 40 percent of home consumption from previous crop year. Nerchantable stocks prior to 1930 were estimated; thereafter, officially reported and based on annual surveys of the Crop Reporting Board. Data for $1943-46$ include the farm-weight equivalent of dehydrated potatoes held by USDA and estimates of quantities held by processors.

2/ Includes quantities used for starch, glucose, and alcohol.
3 Farm-weight equivalent of canned potatoes. This item is included with canned vegetables.
4/ Includes the farm-weight equivalent of dehydrated potatoes.
5/ Includes civilian feeding in areas occupied by our armed forces. Data include the farm-weight equivalent of dehydrated potatoes and potato flour, and, in 1949, a small quantity of potato starch.
6/ Civilian per capita consumption, beginning 1941.
7 Production includes the following quantities left in the ground because of low prices (1,000 bushels): 1928,
7,462; 1932, 2,175; 1943, 440. These quantities are included in "Seed, feed, waste, and nonfood."
8/ Less than 50,000 bushels.
9) Rough estimate.

10/ Includes the farm-veight equivalent of potato flour produced during 1947-49 and shipped for military civilian feeding during 1948 and 1949.
11 Export under price-support program, as reported by the Potato Division, PMA.
12 Voluntary relief shipment.
13/ Preliminary.

Table 85.- Sweetpotatoes: Supply and distribution, calendar years, 1909-52


1/ Estimated. Includes comercial stocks for sale as of January 1, quantity for seed from previous crop, and 40 percent of the farm home consumption of the previous crop year as farm-held supplies for following months.

2/ Estimates based on reported feed and waste for crop years, assuming 70 percent occurs after January 1 and the remaining 30 percent prior to January 1.

3/ Farm-weight equivalent of camed sweetpotatoes. This item is included with canned vegetables.
4. All dehydrated assumed to be used by military or for military civilian feeding in occupied territories.

5/ Estimates for 1941 and 1942 are based on issues per man per day for troops stationed in continental U.S.
Beginning 1943 data include purchases at market centers and estimated local purchases.
6/ Civilian per capita consumption, beginning 1941.
7/ Preliminary.

Table 86.- Dry edible beans (cleaned basis): Supply and distribution, calendar years, 1909-52


1/ Stocks on farms and in commercial warehouses. For the years 1909-4l and 1947-49, Jamuary 1 stock estimates for each year are based on: Official reports on sales of old-crop beans after Jamary 1 ; estimates from the previous crop of homegrown seed saved on farms and. of farm home consumption; and estimated carryover stocks on the folloring September 1. January 1 stocks for 1943-46 represent interpolations based on official stock reports for December 1 of the preceding year and March of the corresponding year. Stocks on Jamuary 1, 1942 and 1950-52 are official estimates. 2/ Derived from Bureau of Census data, supplemented by USDA data since 1941. Dry peas included in exports through Jume 30, 1917 and in shipments to Territories through 1924. Includes garbanzos 1945 to date. 3/ Includes seed for dry bean crop (officially reported), the snap and lim bean crops for processing and fresh use. An approxdration of seed to plant the green crops, besed on seeding rates per acre, was made through 1941. Beginning 1942, data based on disappearance of dry bean vegetable (garden) seed as of July 1, as reported by seed producers. 4/ Adjusted for transfers by military to nonmilitary agencies. Includes procurement for relief feeding in occupied or liberated areas. 5/ Civilian only, 1941 to date. 6/ Adjusted to include exports of garbanzos. 7/ Includes broken beans exported to occupied or liberated areas under the military civilian feeding program: 28, 12, and 16 million pounds in 1947, 1948 and 1949, respectively. 8/ Includes feed and loss: 18 million pounds in 1950, is in 1951, 3 in 1952. 9/Preliminary.

Table 87.- Dry field peas (cleaned basis): Supply and distribution, crop years, 1928-52

| $\begin{aligned} & \text { Crop } \\ & \text { year } \end{aligned}$ | Supply |  |  |  | Distribution |  |  |  |  |  |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  |  |  |  |  |  | $\begin{aligned} & \text { : Feed, Conmer } \\ & : \text { seed, cial } \\ & 5: \text { and : exports } \\ & 1: \text { weste: and } \\ & \text { : ship- } \end{aligned}$ |  | : Deper | ment 0 | $f$ Aamic | culture | :Domestic disap |  | pearance |
|  |  |  |  |  |  |  |  |  |  |  | : Net |  |  | Por capita 6/ |
|  |  |  |  |  | : Ending |  |  | : Begin |  |  | pur | Mli- | © Civil |  |
|  |  |  |  |  | : stock |  |  | : ning | Enaing | ${ }^{\text {eriee }}$ | : chase | : tary |  |  |
|  |  |  |  |  |  |  |  | : stocks |  |  | : for |  | - |  |
|  | Mil. | $\begin{aligned} & \text { Mil. } \\ & \text { 1b. } \end{aligned}$ | Mil.$1 \mathrm{~b}$ | $\begin{aligned} & \text { M11. } \\ & \text { 1b. } \end{aligned}$ | $\begin{aligned} & \text { Mill. } \\ & \text { lb. } \end{aligned}$ | $\begin{aligned} & \text { Mil. } \\ & \underline{1 b_{e}} \end{aligned}$ | $\begin{aligned} & \text { Mil. } \\ & \text { Ib. } \end{aligned}$ | $\begin{aligned} & \text { Mil. } \\ & \text { 1 } b_{0} \end{aligned}$ | $\begin{aligned} & \text { Mil. } \\ & 1 \mathrm{~b}_{\mathrm{e}} \end{aligned}$ | $\begin{aligned} & \text { Mil. } \\ & \text { 1b. } \end{aligned}$ | $\begin{aligned} & \text { Mil. } \\ & \text { lb. } \end{aligned}$ | $\begin{aligned} & \text { Mil. } \\ & \underline{1 b_{0}} \end{aligned}$ | $\begin{aligned} & \text { Mil. } \\ & \text { 1b. } \end{aligned}$ | Lb. |
|  | : 1b. |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1928 | : 168 | -- | $\begin{aligned} & 31 \\ & 41 \end{aligned}$ | $\begin{aligned} & 199 \\ & 203 \end{aligned}$ | - | $\begin{aligned} & 120 \\ & 136 \end{aligned}$ | $\begin{aligned} & 18 \\ & 14 \end{aligned}$ | - | - | - | $-$ | - | 51 | 0.5.4 |
| 1929 : | : 162 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  | : |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1930 : | : 190 |  | 15 | 20 |  | 136 | 8 | - | -- | - | - | - | 61 | . 5 |
| 1931 : | : 198 | - | 20 | 218 | - | 124 | 11 | - | -- | - | - | - | 83 | . 7 |
| 1932 : | 188 | - | 21 | 209 | - | 133 | 7 | - | - |  | - |  | 69 | . 6 |
| 1933 : | : 233 | - | 25 | 258 | - | 146 | 4 | - | -- | - |  | - | 108 | - 9 |
| 1934 | 257 - 17 274 - 167 |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1935 : | : 297 | 14 | 13 | 324 | 90 | 156 | 9 | - | - | -- | - | - | 69 | . 5 |
| 1936 : | : 248 | 90 | 11 | 349 | 104 | 157 | 16 | - | - | - | $\cdots$ | - | 72 | . 6 |
| 1937 : | : 283 | 104 | 12 | 399 | 164 | 144 | 18 | - | - | - | - | - | 73 | . 6 |
| 1938 : | 147 | 164 | 8 | 319 | 98 | 131 | 17 | - | - | - | - | - | 73 | . 6 |
| 1939 | : 172 | 193 | 12 | 377 | 101 | 143 | 38 | - | - | -- | - | - | 95 | - 7 |
|  | : ${ }^{\text {a }}$ |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1940 : | : 202 | 101 | 13 | 316 | 31 | 166 | 22 | - | - | - | - | - | 97 | . 7 |
| 1941 : | : 346 | 31 | 12 | 389 | 49 | 210 | 19 | - | 18 | 30 | 48 | -- | 63 | . 5 |
| 1942 : | : 676 | 49 | 10 | 735 | 86 | 288 | 8 | 18 | 192 | 93 | 267 | 15 | 71 | . 5 |
| 1943 : | : 1,002 | 86 | 8 | 1,096 | 2/177 | 248 | 5 | 192 | 417 | 7/192 | 7/417 | $8 / 150$ | 99 | . 8 |
| 1944 | : 802 | 9/177 | 12 | 991 | 10/132 | 248 | 44 | 417 | 137 | 264 | -16 | $8 / 484$ | 99 | . 8 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1945 : | : 537 | 10/132 | 10 | 679 | 46 | 251 | 100 | 137 | - | 229 | 92 | 84 | 106 | . 8 |
| 1946 : | :11/610 | 46 | 5 | 661 | 76 | 210 | 118 |  | - |  | - | 11/152 | 105 | . 7 |
| 1947 : | :11/582 | 76 | 9 | 667 | 146 | 137 | 59 | - | - | 28 | 28 | 11/229 | 68 | . 5 |
| 1948 : | : 330 | 146 | 9 | 485 | 89 | 122 | 39 | - | 36 | 23 | 59 | 56 | 120 | . 8 |
| 1949 | 292 | 89 | 12 | 393 | 86 | 129 | 36 | 36 | 90 | - | 54 | 36 | 52 | . 4 |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| 1950 : | : 295 | 86 | 5 | 386 | 90 | 164 | 58 | 90 | - | - | -90 | 50 | 114 | .7 |
| 1951 : | : 352 | 90 | 7 | 449 | 124 | 138 | 62 | - | - | - | - | 23 | 102 | . 7 |
| 1952 12/: | : 238 | 124 | 5 | 367 | 90 | 132 | 32 | - | - | - | - | 10 | 103 | . 7 |
|  | : |  |  |  |  |  |  |  |  |  |  |  |  |  |
| : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
|  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |  |
| : |  |  |  |  |  |  |  |  |  |  |  |  |  |  |

1/ Season begins approximately September. Clean-out estimated through 1940.
2/ Stock figures 1942-46 officially reported. All other years eatimated. Beginning 1939, data include dealers' atocke of vegetable or garden seed as of July 1.
3/General imports through 1933; thereafter, imports for consumption. Includes dry peas, lupines, and lentils through 1933. Begiming 1934, includes dry peas and lentils only. Includes garbanzos prior to 1945.

If Includes seed for planting the dry field crop and green crops for processing and fresh use. Seed to slinat the dry field crop was eatimated through 1940; subsequent years were reported by Crop Reporting Board. An approsimation of seed to plant the green crope, based on estimated seeding rates per acre, mas made through 1938. Beginning 1939, data were based on disappearance of dry pea vegetable seed, fiscal year basis, as indicated by seed dealers reports and other data. Feed and loss were estimated by Crop Reporting Board.

5/ Data from U. S. Department of Commerce, except for period during World War II when this information was supplemented by data from USDA. The dry pee equivalent of dehydrated soupe, ete. included beginning 1944. Incindes garbansos prior to 1945.

6/ Civilian only, 1942 to date.
I Adjusted to exclude exports of garbansos.
8 Excludes peas tranaferred by Army to normilitary agencies.
2/ Includes 9 gillion pounde procured by Army in 1943 and transferred in 1944.
10. Includes 23 million pounds procured by Army in 1944 and transferred in 1945.

11 Includes 3 million pounds of chipped peas in 1946 and 2 in 1947 shipped for civilian feeding.
12/ Preliminary.
Table 89.- Flour, wheat: Supply and distribution, 1935-52


Table 90 .- Rye: Supply and distribution, calendar years, 1909-52


1/ Farm stocks 1909-33, December 1; 1934 to date, January 1. Terminal stocks 1909 to date, January 1. Beginning in 1943, the figures include not only farm and terminal stocks, but also stocks in interior mills and elevators. 2/ Includes flour in terms of rye. 3/ See text in chapter 1 for derivation. Only negligible quantities of rye flour appear to have been procured by the armed services. 4/Civilian only, 1941 to date. 5/ Less than 500,000 bushels. 6/ Includes rye for civilian relief feeding in areas occupied by our Armed Forces as follows: 1 million bushels in 1945 and 1948, 3.3 million bushels in 1949, and 0.5 million bushels in 1950. I/ Includes U.S.D.A. procurement for export of 4.4 million bushels. 8/ Preliminary.
Table 91.- Rice: Supply and distribution, marketing years, 1935-52 1/


1/ Marketing year beginning previous August in South and previous October in California. Unmilled rice converted from rough milled; converted separately for the Southern States and Callfornia. fiscal-year basis, 1941 to date. explanation of various items. Exports, shipments, and mils, 2/ Includes stocks on farms, in country wareht to the U.S. Territories. 5/ Includes civilian relief feeding in as of July 1.

Table 92.- Corn, grain only: Supply and distribution, calendar years, 1927-52

$1 /$ Total farm, terminal market, and Govermment-owned stocks 1927-43. Beginning 1944 figures also include interior mill, elevator, and warehouse stocks, data for which were not available prior to April 1943.

2/ Includes grain equivalent of corn products.
3/ Residual; includes feed, seed, alcohol, industrial uses, and waste.
4. Excludes corn and corn products used in alcoholic beverages.

5/ Grain equivalent of corn products concmed. Civilian only, 1941 to date.
6/ Less than 500,000 bushels.
I/ Preliminary.

Table 93 .- Oats: Supply and distribution, calendar years, 1927-52


I/ Total farm and terninal market stocks, 1927-43. Beginning 1944 figures include interior mill, elevator, and warehouse stocks, data for which were not available prior to April 1943. 2/ Department of Agriculture deliveries include grain equivalent of oat food products. Commercial exports include oats and grain equivalent of oatmeal. 3/Residual includes feed, seed, and waste. 4/ Principally oatmeal. Includes an allowance for ready-to-eat oat cereals and oats used in infant foods in recent years. 5/ Oatmeal, ready-to-eat cereals, and infant food converted to grain equivalent of oats. 6/ Less than 500,000 bushels. I/ Preliminary.

Table 94 . - Barlej: Supply and distribution, calendar years, 1934-52


1/ Total farm and terminal market atocks, 1934-43. Beginning 1944, includes interior mill, elevator, and warehouse stocks, data for which were not available prior to April 1943.

2/ Department of Agriculture deliveries include grain equivalent of barlej food products. Commercial exports include grein equivalent of barley and malt.

3/ Residual, includes feed, seed, alcohol, industrial uses, and waste.
4/ Excludes quentities used in alcoholic beverages.
$5 /$ Beginning July 2944, malt conversion factor was changed to 1 bushel of barley equivalent to 34 pouride of malt. Prior to July 1944 the conversion factor used was 1 bushel of barley equivalent to 37.4 pounds of malt.

6/ Includes malt equivalent of the barley used in producing pearl barley.
I/ Less than 500,000 bushels.
8) Preliminary.

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Table 95.- Sugar; cane and beet, raw value: Supply and distribution, 1909-52


1/ U. S. Department of Agriculture crop-year production data, 1909-34; calendar-year data beginning 1935. 2/ Cane sugar stocks: 1909-33, Willott and Gray Wookly Statistical Sugar Trade Journal; boet sugar: 1909-13, estimatos from Department of Agriculture production f1gures erd Willett and Gray deliveries statiatice; 1914-33 from Meinrath Brokerage Co.; 1934 to date stocke fram Sugar Branch, PMA, Dopartment of Agriculture. Beginning l939 includes mainland cane sugar stocke, and beginning 1940 includes raw eugar for proceseing held by importers other than refiners. Visible stocks are the holdings of primary distributions (the refiners). 3/ 1909-34, data from U. S. Department of Commerce, Foreign Coumerce and Navigation; 1935 to date from Sugar Branch, PMA. 4/ 1909-41, data from U. S. Dopartment of Commerce, Foreign Commerce and Navigation; 1942 to date, quantities delivered for export as compiled by Sugar Branch, PMA. 5/ Beginning in 1935 civilian consumption estimates are adjusted for changes in stocks held by wholesalers, retailers, and industrial users, described as "invisible." Although such changes for 1935 through 1951 are rough approximations based on an admittediy inadequate esmple surrey, they are probably in the proper direction and should be considered in estimating net disappearance of eugar for domestic consumption. Since 1951 the Bureau of the Census has conducted a semple survey of such stocke. Civilian per capita consumption only, beginning 1941. 6/ Excludes 75,000 short tons passing through the U. S. but not officially reported as imports. I/ Includes 145,000 short tons shipped commercially for civilian feeding; but does not include purchase abroad of about 133,000 short tone not entering into domestic supplies. 8/Excludes 11,000 ehort tons shipped directly from Cuba. 9/ Includes 4,000 short tone for civilian foeding. 10 / Includes 49,000 short tons for civilian fooding. 11 / Includes 1,000 short tons for civilian fooding. 12/ Preliminary.

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Mable 96.- Coffee: Supply and distribution, 1910-5?
(In terms of green beans)


1/ Stocks 1910-19 from Balde Directoria de Industria E. Commercia, Sao Paulo; 1920-36, The Brazilian Review; 1937-40, from the New York Coffee and Sugar Exchange, Inc.; Jamuary 1, 1941 and January 1, 1948 , from Bureau of Foreign and Domestic Cammerce, U. S. Department of Commerce; January 1, 1942 through January 1, 1947 and from January 1, 1949 through January 1, 1952 fram Bureau of Census, U. S. Department of Cawerce; January 1, 1953 estimated fram trade reports.
2/ Includes deliveries for export and territorial programs of roasted copfee and soluble coffee products on a greenbean equivalent basis. Does not include deliveries of green coffee per se because these transactions actually repre-
sent a re-export of copfee.
3/ Civilian per capita consumption only, 1941 to date.
4/ Less than 0.5 million poumds.
5 Stocks Jamuary 1, 1945 , 1946, and 1947 have been adjusted to include military stock transfers to nonmilitary agencies.
6/ Preliminary.

Table 97.- Tea: Supply and distribution, 1909-52

| Year | : Supply |  |  | Distribution |  |  |  |  |
| :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: | :---: |
|  | Begin- : : Commercial: Domastic disappearance |  |  |  |  |  |  |  |
|  | $\begin{aligned} & : \text { ning } \\ & : \text { stocks } \\ & : \quad 1 / \\ & \hline \end{aligned}$ | Imports 2/ | Total <br> supply | Ending stocks 1/ | $\begin{aligned} & \text { : exports } \\ & \text { : and } \\ & \text { shipment } \end{aligned}$ | Military | :cjvilian | Per capita 3/ |
|  | : Mil. lb. Mil. lb. Mil. lb. Mil. lb. Mil. lb. Mil. Ib. Mil. Jh. |  |  |  |  |  |  | Lb. |
| 1909 | : --- | 103 | 103 | --- | -- | --- | 103 | 1.1 |
| 1910 | : --- | 95 | 95 | --- | -- | --- | 95 | 1.0 |
| 1911 | : --- | 102 | 102 | --- | --- | --- | 102 | 1.1 |
| 1912 | : --- | 98 | 98 | --- | --- | --- | 98 | 1.0 |
| 1913 | : --- | 88 | 88 | -- | -- | --- | 88 | . 9 |
| 1914 | : --- | 94 | 94 | --- | -- | --- | 94 | . 9 |
| 1915 | : --- | 103 | 103 | --- | -- | --- | 103 | 1.0 |
| 1916 | : --- | 104 | 104 | --- | -- | --- | 104 | 1.0 |
| 1917 | : | 125 | 125 | --- | - | - | 125 | 1.2 |
| 1918 | -- | 126 | 126 | --- | -- | --- | 126 | 1.2 |
| 1919 | - | 65 | 65 | --- | $\cdots$ | --- | 65 | . 6 |
| 1920 | : | 88 | 88 | --- | -- | --- | 88 | . 8 |
| 1921 | - | 75 | 75 | --- | -- | --- | 75 | . 7 |
| 1922 | - | 94 | 94 | --- | - | --- | 94 | . 8 |
| 1923 | : --- | 102 | 102 | --- | - | --- | 102 | . 9 |
| 1924 | : --- | 91 | 91 | --- | -- | --- | 91 | . 8 |
| 1925 | --- | 100 | 100 | --- | - | --- | 100 | . 9 |
| 1926 | -- | 95 | 95 | --- | - | --- | 95 | . 8 |
| 1927 | - | 88 | 88 | --- | -- | -- | 88 | . 7 |
| 1929 | --- | 88 | 88 | --- | -- | --- | 89 | . 7 |
| 1930 | - --- | 84 | 84 | --- | -- | --- | 88 84 | -7 |
| 1931 | --- | 86 | 86 | --- | - | --- | 86 | . 7 |
| 1932 | - | 94 | 94 | --- | -- | --- | 94 | . 7 |
| 1933 | --- | 96 | 96 | --- | -- | --- | 96 | . 8 |
| 1934 | 36 | 74 85 | 74 | --- | - | --- | 74 | . 6 |
| 1935 | 36 39 | 85 81 | 121 | 39 | - | --- | 82 | . 6 |
| 1937 | 38 | 93 | 131 | 38 43 | -- | --- | 82 | . 6 |
| 1938 | 43 | 81 | 124 | 37 | -- | --- | 88 | -7 |
| 1939 | 37 | 97 | 134 | 42 | - | --- | 92 | .7 |
| 1940 | 42 | 97 | 139 | 51 | -- | --- | 88 | . 7 |
| 1941 | 51 | 102 | 153 | 49 | - | --- | 104 | . 8 |
| 1942 | 49 | 48 84 | 97 106 | 22 | --- | 6 | 69 | . 5 |
| 1943 | 22 29 | 84 | 106 | 23 | -- | 14 | 69 | . 5 |
| 1945 | 36 | 83 | 118 | 43 $4 / 41$ | -- | 5 | 70 | . 5 |
| 1946 | $4 / 41$ | 92 | 133 | 5/54 | - | -- | 71 79 | . 5 |
| 1947 | 5/54 | 61 | 115 | 32 | -- | - | 79 83 | . 6 |
| 1948 1949 | 32 | 89 93 | 121 | 37 | - | 1 | 83 | . 6 |
| 1949 | 37 40 | 93 115 | 130 | 40 | -- | 2 | 88 | . 6 |
| 1951 | 63 | 115 86 | 149 | 48 | $\cdots$ | 2 | 90 | . 6 |
| 1952 6/ | 48 | 93 | 141 | 40 | 3 | 3 | 98 99 | . 6 |

1/ Stocks from 1909-34 not available. Stocks on January 1, 1935, estimated. Stocks from 1935-43 and 1945 to date reported by Tea Bureau. Inc. Stocks for 1944 from the Department of Agriculture.
2/ Imports less re-exports.
3/ Civilian per chpita consumption only, 1941 to date.
4 Includes 6 million pounds transferred from surplus military atocks.
6/ Includes 1 million pounds transferred from surplus military stocks.
6/ Preliminary.
7/ Less than 500,000 pounds.

Table 98.- Cocoa beans: Supply and distribution, 1909-52 1."

$1 /$ Includes cocoa products and cocoa beans on a bean-equivalent basis. 2/ Stocks 1909-18 not available. Stocks 1918-24 from George E. Lee, Tea and Coffee Trade Journal, New York; 1925-40 and 1946 to date from New York Cocoa Exchange reports; 1941-45 from U. S. Department of Agriculture. 3/ Re-exports deducted from imports to obtain imports for consumption. 4/ Civilian per capita consumption only, 1941 to date. $5 /$ Includes the equivalent of 3 million pounds of cocoa beans transferred from surplus military stocks in 1944 and 6 million pounds in 1945. 6/ Includes the equivalent of 23 million pounds of cocoa beans transferred to UNRRA from surplus military stocks in 1945, and 11 million pounds in 1946. I/ Less than 500,000 pounds. 8/Prelimiary.

Table 99.- Tree nuts: Supply and distribution, crop year, 1909-52 1/


1/ Includes almonds, filberts, pecans, walnuts, Brazil, pignolia, pistache, chestnuts, cashews, and miscellaneous tree nuts; excludes coconuts.

2/ Production begins July of year indicated. Includes almonds, filberts, walnuts, and pecans.
3/ Foreign trade data on fiscal year tasis, beginning July 1 of year indicated.
4/ Civilian per capita only, 1942-46.
5/ Small quantities but adequate data not available.
6/ Proliminary.

Trable 100.- Pennits (kernel basis): Sumply and distribution, crop years, 1909-5?


1/ Production in crop year beginning as follows: Southwestern area, August 1; Southeastern area, September 1; Virginia-Carolina area, November 1.

2/ 1909-37, 66.67 percent was used to convert farmers' stock peanuts to kernel basis; beginning 1938 conversion factors calculated from result of shelling operations in each year.
3/ 1920-37, October 1 stocks in crushing mille as reported by the Bureau of the Census; 1925-30, includes stocks in cold storage warehouses reported by Federal Trade Comission; beginning 1938, September 1 stocks in all positions, including oilstock peanuts, as reported by Bureau of Agricultural Econcmics.
4) Represents increase in urreported stocks, mill shrinkage, and adjustment for new crop peanuts included in September 1 stocks. This is a residual item.
5/ Shipments to U. S. Territories included beginning 1943 except to Bawaii and Alaska after March 1ghf, when reporting vas discontimued. Exports of oilstock peamuts, which began in 1946 are excluded. Before 1945 , exports of shelled end unshelled peanuts assumed to be in proportion to the domestic disappearance breakdown beginning lght exports of shelled and unshelled reported separately.

6/ Includes edible-grade shelled peanuts crushed; year beginning October prior to 1943.
7 / Includes consumption of commercially cleaned and shelled peanuts plus quantities used on farms and farm sales for food use. Civilian per capita only, 1941 to date.

8/ Not available.
9/ Estimated from peamut oil production.
10/ Less than 500,000 pounds.
11/ Includes cold storage warehouse stocks as of September 1
12/ Includes cold storage warehouse stocks as of July 1.
13/ Preliminary.

Table 101.- Spices: Imports for consumption, 1918-52 1/


1/ Imports for consumption of spices and herbs, ground and unground, as reported by the Department of Camerce minus exports of duty-free foreign spices. Negative inports for consurpwas imported.

2/ Cassia, cassia buds, and cassia vera.
3/ Includes stems.
4/ Excludes 2,000 pounds for diplomatic officers.

Table 101.- Spices: Imports for consumption, 1918-52 1/ -Continued


5/ Includes cardamon seed, curry end curry powder producte, laurel leaves, marjoram, origanum, crude saffron, thyme, and mixed or spices, n.e.p.f. Bxcludes axports of foreign duty-free spices, when reported. Exports of foreign apices "not separately provided for" include, if any, ground cloves, ground gingor root, mace, ground nutmege, paprica, ground fepper, sage, and tonka beans. These could not be deducted from the individual epices. They have been deducted from the "other" category.


1/ Imports for consumption of spices reported by the Department of Commerce. See table 101 for detail. 2/ Excludes quantitios used for seed, estimated at 4 pounds per acre planted the following year. It was assumed that oach year's crop was consumed in the following calendar year. 3/ Re ports of trade with Alaska and Hawail were discontinued after March 1948. 4/ Imports for consumption plus mustard seed produced in the United States for consumption minus domestic exports and shipmonts to U.S. Territories. 5/ Total consumption divided by total population because data on military takings not available. 6/ Not available. I/ Preliminary.

| Table | Brief title | Page | Table | Brief title | Page |
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| 1-3 | Index of supply-utilization of agricultural food products |  | 38 | Total poundage for each food group, all foods and |  |
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| 22 | Potatoes, sweetpotatoes, dry beans and peas ............... | 122 | $\begin{gathered} 57-58 \\ 59 \end{gathered}$ | Poultry <br> Eggs | $\begin{gathered} 201-202 \\ 203 \end{gathered}$ |
| 23 | Cereal products | 123 | 60-68 | Dairy products ................. | 204-212 |
| 24 | Sugar, sirups, and beverages | 124 | 68-73 | Fats and 0ils .................. | 212-216 |
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| 26 | Spices ............... | 126 | 79-83 | Vegetables, baby foods, soups. | 225-228 |
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| 28-37 | Per capita consumption, approximate retail weight |  | $\begin{gathered} 88-94 \\ 95 \end{gathered}$ | Grains and wheat flour ....... <br> Sugar ............................... | $\begin{gathered} 233-239 \\ 240 \end{gathered}$ |
| 28 | Meat and game. | 134 | 96 | Coffee | $241$ |
| 29 | Fish | 135 | 97 | Tea ............................. | 242 |
| 30 | Poultry and eggs | 136 | 98 | Cocoa beans | 243 |
| 31 | Dairy products | 137 | 99 | Tree nuts | 244 |
| 32 | Fats and oils | 138 | 100 | Peanuts ......................... | 245 |
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| 36 | Vegetables, potatoes and sweetpotatoes, dry beans and peas from home gardens . ............. | 142 | Figure |  |  |
| 37 | Sugars, sirups, and beverages. | 143 | 1 | Utilization of soybeans ... | 10 |


[^0]:    3/ It should be noted that "other industries" is used in a general sense denoting all consumers outside agricultural enterprises. The term "industry" includes both "other industries" and agriculture.

[^1]:    9/ This procedure does not directly reflect changes in farm inven. tories of live animals or imports and exports of live animals, because data are not available for these categories on a live-weight basis. However, this affects neither the production nor the utilization value because the live weight of animals slaughtered represents net marketings of livestock.

[^2]:    1/ Preliminary

[^3]:    48/ Prepared by Sidney Gershben, Bureau of Agricultural Economics, and

[^4]:    73/ See footnote 72, p. 81.
    $74 /$ U. S. Production and Marketing Administration. Fruit and Vegetable Branch, Canned Citrus Fruit Segments and Juices: Annual Pack and Disposition Data, 1928-29 to 1945-48. 19 pp . (Processed.)

[^5]:    1/ U. S. Bureau of Agricultural Economics. The National Food Situatiōn. Quarterly. (Processed.)

    2/ See current issues of The Livestock and Meat Situation, The Poultry and Egg Situation, and The Dairy Situation, processed publications issued by the Bureau of Agricultural Economics.

[^6]:    Prior to 1937, items not reported separately. Civilian consumption beginning 1941. Includes single-strength and concentrated juices.
    नोलोली of citrus juices. 5/ Less thain 0.05 pounds. 6/ Preliminary.

[^7]:    3/ U. S. Bureau of Human Nutrition and Home Economics. Family Food Consumption in the United States, Spring 1942. U. S. Dept. Agr. Misc. Pub. 550, 157 pp. 1944.

    4/ Adelson, Sadye F., and Blake, Ennis C. Diets of Families in the Open Country, a Georgia and an Ohio County, Summer 1945, U. S. Dept. Agr. Misc. Pub. 704, 90 pp. April 1950.

[^8]:    $2 /$ See pages $37-45$, U. S. Dept. Agr., Agr. Inform. Bul. 48, Competitive Relationships between Sugar and Corn Sweeteners by Phillip E. Jones and F. G. Thomason, June 1951. 245 pp. Washington, D. C. 6/ U. S. Bureau of the Census. Annual publication.

[^9]:     I/ Civilian consumption only, 1941 to date. See text for sources and methods used.
    ning 1942 the proportion has been varied largely on the basis of information obtained
    
    

[^10]:     limes, 0.95 ; grapefruit, 0.91 ; apples, 0.90 ; apricots, $0.91 ;$ avocados
    0.90 ; pineapple, 0.85 ; plums and prunes, 0.89 ; and strawberries, 0.89 2/ Tangerines included with oranges, 1909-19. information.
    4/ Less than 0.05 pounds.
    5/ Estimated.
    6/ Preliminary.

[^11]:    
     tables 0.85 . Mincr
    $\frac{2}{3}$ / Includes 0.1 pound of shallots in each year.
    $\frac{4}{5}$ / Included with fruits for computation of nutritive values. $\frac{4}{5} /$ Included $\operatorname{Preliminary.}$

[^12]:    2/ Composition of Foods - Raw, Processed, Prepared. U. S. Dept. Agr. Agr. Handbook No. 8. 1950. Table 2.- Composition of foods, 1 pound, as purchased.

[^13]:    1/ Based on data in table 44.
    2). Preliminary.

[^14]:    
    
     ingredients other than flour.

[^15]:    4/ Exports and change in stocks excoed production by 1 million pounds.
    5 Less than 500,000 pounds.
    7/ Prelimimary. 36 million pounds transforred to U. S. Dopartmont of Agriculture from military stocks.

[^16]:    Milk equivalent of butter used in making margarine．
    Approximations to the per capita consumption levels

[^17]:    remaining columns except civilian disappearance were determined by applying percentages of milk fat in each product to amount of product. Civilian disappearance computed frcm in civilian feeding programs abroad. 3/ Cold-storage holdings of cream included beginning Jamuary 1 , l9al; condensed milk (bulk) beginning January 1, 1949. 4/Less than 500,000 pounds. 5/Preliminary.

[^18]:    1/ Includes butter (fat content), lard, and other edible oils listed in note 2 of table 72. 2/ Includes rough estimate of stocks of
    
     unrounded data. 6/ Civilian only, 1941 to date. 7/Beginning 1942 includes stocks of sunflower and tea seed oils not reported separetely ta preceding years. E/ Beginning 1944 includes stocks of secondary or processed edible oils not previously reported by the Bureau of the Census. g/ Includes stocks of margarine as reported by the Bureau of the Census beginning 1950. 10/ Preliminary.

[^19]:    1. Civilian per capita only, beginning 1941.
