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3 THE TURKEY INDUSTRY

PRESENT SITUATION AND OUTLOOK

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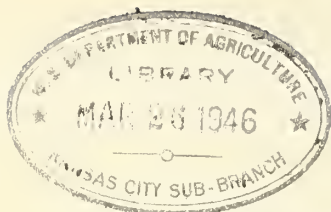
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United States Department of Agriculture
2415. Farm Credit Administration
Economic and Credit Research Division
544 Kansas City 8, Missouri

January 1946



SUMMARY

Production of turkeys in the United States has doubled in the past 15 years. With expanded production have come sweeping changes in production practices with the result that turkey raising now involves large cash outlays for operating expenses and growers consequently require important amounts of production credit. Likewise, cooperative turkey marketing associations also require financing from time to time.

In recent decades improved turkey production practices, including rigid sanitation and control of losses from all sources, have been widely adopted, making possible the tremendous growth in number produced, and tending to favor highly specialized production in relatively large flocks rather than production in small farm flocks as a side line to other farming.

Costs of producing market turkeys include feed costs accounting for over half of the total, poult costs representing about one-sixth to one-fifth of the total, and labor and miscellaneous items making up the balance.

Feed grains, including wheat, make up the bulk of turkey rations. The ratio of turkey price to feed price has been favorable during 1943-45, averaging above 11:1 compared with the 10-year average, 1934-43, of 9.2:1. Since supplies of turkey feeds may be short in a number of areas this year, it will pay growers to plan feed supplies well in advance.

Prices received for turkeys depend primarily upon the relative level of consumer income in the United States, and the relative size of the turkey crop. Changes in supplies of chicken meat also affect turkey prices.

Per capita consumption of turkey in the United States has increased from an annual average of 2.0 pounds in 1930-34 to 2.6 pounds in 1935-39 and 3.5 pounds in 1940-44. Civilian supplies of turkey in 1945 represent 4.5 pounds per capita.

Production of turkeys will probably continue for 1 or 2 years at a per capita rate considerably larger than the prewar average and somewhat larger than the 1940-44 average. Because of indicated increased total supplies of all meats, smaller takings for noncivilian uses than in recent years, and reduced consumer income, turkey prices in the next few years are expected to be moderately lower than 1943-44 average prices with greater discounts for birds of less desirable quality and of the less desired weights.

Minimum price support for turkeys, as a Steagall commodity, would provide an average farm price of 22.7 cents when the index of prices paid by farmers is 175 (October 1945 level). This compares with 1943-44 average prices of 33.2 cents. Turkey prices in relation to prices paid by farmers, are not expected to decline during 1946-47 to the prescribed minimum support level.

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THE TURKEY INDUSTRY: PRESENT SITUATION AND OUTLOOK 1/

During the past 15 years turkey production in the United States has expanded more rapidly than the production of most crops, livestock, or livestock products. Even after large deductions for noncivilian uses, civilians had a larger per capita supply of turkey in 1943 and 1944 than in any year before 1940. Nevertheless, civilians would have bought more turkey at ceiling prices if the supply had been available in these 2 years. Now the 1945 crop is indicated to be 18 percent larger than the 1944 crop, which had exceeded all previous records. At the same time noncivilian takings will be less than in 1944. Turkey growers are, therefore, beginning to question whether consumers will buy ever larger per capita quantities of turkey year after year at prices profitable to growers.

The turkey industry today - Tremendous expansion in turkey production has been made possible by fundamental changes in production methods. Since the end of the First World War, turkey raising has become a highly specialized farm enterprise. Before that time the larger part of the Nation's annual turkey crop came from a comparatively large number of farms keeping relatively small turkey flocks as a side line to other crop and livestock production. In recent years the bulk of the crop has been produced in relatively large flocks on a smaller number of farms where turkeys are the chief, or at least a major cash crop. As now conducted, the turkey enterprise requires a considerable capital investment and relatively large amounts of cash operating funds. Turkey growers, therefore, use important amounts of production credit during the growing season. Turkey marketing cooperatives also require some financing.

Purpose of this report - This report was designed to assemble in convenient form information which will assist credit administrators in forming their own judgment about the probable future trends in turkey production and income. In the preparation of this report, available sources in the United States Department of Agriculture and elsewhere have been reviewed and utilized. Since the writer's own judgment has entered into the selection of data and the presentation of indicated trends, it must be emphasized that the report does not represent an official FCA viewpoint. Each administrator should form his own judgment on the basis of the facts here assembled and all other information accessible to him.

Importance of turkey income in total United States farm income - While cash farm receipts from the sale of turkeys averaged only .79 percent of total cash receipts from all farm marketings during 1935-39, cash income from turkeys has represented an increasing percentage of the total. In 1944, cash farm receipts from turkeys was 198 million dollars and constituted 1.00 percent of cash received from marketings by the Nation's farmers. Turkey sales made up 7.8 percent of all poultry and poultry products marketed in 1935-39, and averaged 8.2 percent of

1/ This report was prepared by Earl H. Tonn.

total poultry marketings in 1940-44. Cash farm income from turkeys was about 8 percent as large as cash farm income from cattle and calves in 1944.

Number raised has doubled in 15 years - In the years 1929-31 about 18 million turkeys were raised annually in the United States. In the recent 3 years, 1943-45, annual production averaged nearly 38 million birds, or more than twice the average of only 15 years earlier. Prior to 1938 no annual crop had exceeded 28 million birds, while no crop since 1939 has fallen much below 33 millions. The expanded crops from 1939 on were largely due to large grain feed supplies, 1939-42, rapidly rising consumer income, and to noncivilian demand and favorable ceiling price relationships, 1943-45.

During 1929-44, turkey raising increased in all geographic areas of the United States except the South Central States. Regional and United States trends are shown graphically in chart 1.

Recent history of the turkey industry - Although the greatest expansion in United States turkey production did not occur until the 1930's, American farmers were interested in turkey raising long before that time. In the preceding half century, however, the growers' inability to cope with blackhead drove the industry continually to new areas. Extensive production developed in one area after another only to suffer rapid decline or virtual abandonment when disease losses cut profits to the vanishing point. Persistent research during the 1920's developed methods for the control of blackhead. These methods combined with improved management to control losses from other diseases, parasites, and predators were widely adopted in the 1930's. Involving the most rigid sanitation and strict management throughout the breeding and growing season, the application of these methods proved profitable wherever turkeys were produced as a major crop, but often were found burdensome and less economical where turkeys were grown on a small scale, incidental to other farm production.

Wide adoption of improved methods permitted the industry, newly developed in the Mountain and Pacific States, to become stabilized in these areas, and to be reestablished in the entire middle section from Minnesota through Texas, and the Middle Atlantic States. Chart 2 shows the present rather wide distribution of turkey raising in the United States, and the areas where it is principally concentrated. With the trend toward production in large, highly specialized units, the turkey industry has tended to concentrate in areas having special advantages, such as surplus grain, favorable climate, or nearness to large population centers (turkey consumers). Since 1940, about three-fifths of the crop has been grown in ten States ^{1/}; the trend toward concentration in the leading States is illustrated by the following data at 5-year intervals, on number raised:

^{1/} The ten leading States and their 1944 production in million turkeys raised are as follows: California 4.3; Texas 3.8; Minnesota 3.3; Iowa 2.1; Oregon 2.1; Utah 1.7; Missouri 1.5; Washington 1.4; Pennsylvania 1.3; and Nebraska 1.2. See table 1 on page 13, for data by States, 1929-45.

CHART 1
TURKEYS RAISED DURING SELECTED PERIODS, 1929-45
ANNUAL AVERAGE

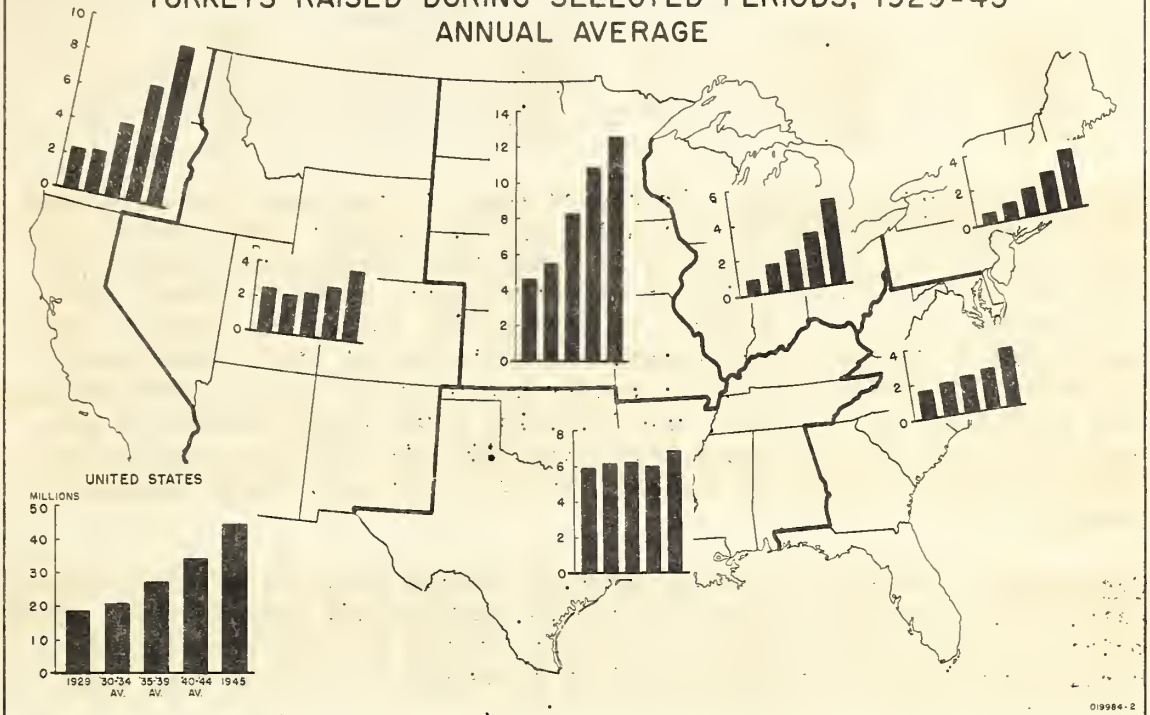
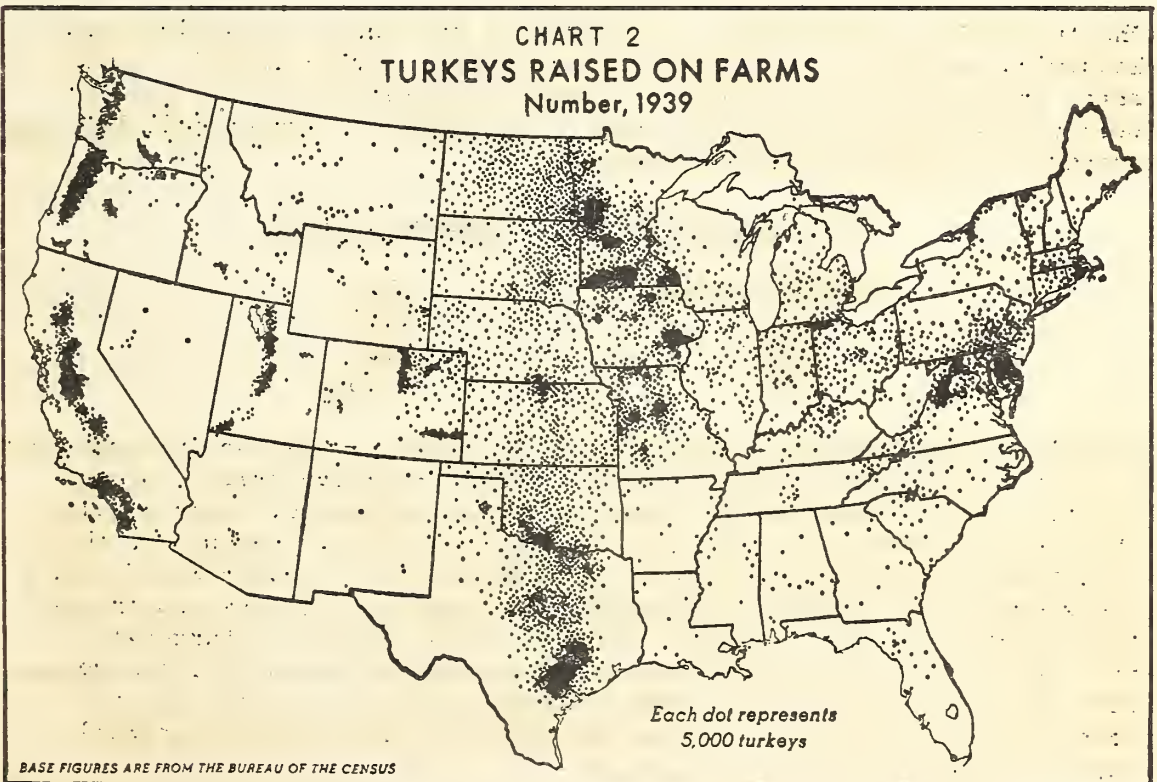


CHART 2
TURKEYS RAISED ON FARMS
Number, 1939



<u>Year</u>	<u>United States</u> 1,000,000's	<u>10 States</u> 1,000,000's	<u>Ratio: 10 States to total United States</u> Percent
1930	17.4	8.2	47
1935	20.8	10.4	50
1940	34.2	19.5	57
1945	44.2	27.5	62

Costs of producing turkeys - In recent years three items have accounted for the bulk of the cost of producing market turkeys: feed, poults, and labor. While the amount of each item may vary considerably under the different price relationships of different years or of different areas in the same year, it is helpful in considering turkey financing to have some guide to indicate the probable distribution of total costs among the principal items. Until the reader has provided himself more definite data applicable to his area, the following rough approximation of percentage distribution of costs based upon 1942-44 conditions may serve: feed 60 percent, poults 20 percent, labor 10 percent, other expense 10 percent.

Feed costs - The bulk of turkey growing rations consists of corn, wheat, oats, barley, sorghum grains, millfeeds, and protein supplements. Grain prices are beyond the control of turkey growers but those located in surplus grain areas are usually at an advantage with respect to feed costs over growers in deficit grain areas.

The turkey-feed price ratio as computed by the Bureau of Agricultural Economics has been more favorable than average during 1943-45. This ratio, representing the number of pounds of poultry feeds at current prices which the current farm price of one pound of turkey will buy, has averaged as follows in recent years:

<u>Year or period</u>	<u>Pounds of feed</u>
1934-43 average	9.2
1943	11.1
1944	10.8
1945	11.5 a/

Relatively wide variations may occur from region to region and from year to year in the kinds of feed utilized, their relative prices, and the quantity of feed consumed per pound of turkey marketed. This is also affected by percent of death loss, another variable. Because of these variations a turkey-feed price ratio at which the producer would merely break even is not uniform but varies with local conditions and production practices in the individual outfit. What different turkey-feed price ratios mean to growers may be illustrated by assuming, for convenience in making comparisons, that 6 pounds of feed are required per pound of turkey marketed. If then the ratio is 11:1 feed costs will

a/ January through October.

absorb only 55 percent of the growers' selling price of turkeys leaving 45 percent of the sales income to pay other costs and provide net income to growers. If, however, the ratio is 9:1, feed costs will absorb 67 percent of the growers' sales price leaving only 33 percent for all other costs and the growers' net income.

Following are some representative data pertaining to pounds of feed utilized per pound of turkey produced. These figures include grain, mash, and concentrated feeds, and exclude range and green feeds:

<u>Source of averages</u>	<u>Year or period</u>	<u>Feed per turkey matured</u>	<u>Average market weight of turkeys</u>	<u>Feed per pound of turkey matured</u>
		Pounds	Pounds	Pounds
New York <u>a/</u>	1943	103	16.7	6.2
Minnesota <u>b/</u>	1936-42	-	-	5.6
Utah <u>c/</u>	1942	114	17.2	6.6
California <u>d/</u>	1941	93	19.4	4.8

Turkey growers are particularly vulnerable to a price squeeze on feed in the event of shortened grain crops. If growers have not covered most of their requirements by advance purchases, they may be left with a flock of half-grown turkeys representing a costly investment which can be salvaged only if feed is purchased at prices which may result in a net loss on the year's operations. In the late 1930's and early 1940's, turkey growers were largely protected from this hazard by the large storage stocks of grain.

a/ Based on records of 32 flocks representing 90,009 poults started, with a mortality of 34.6 percent. See Costs and Returns for the Turkey Enterprise, 1943; A. E. 520, New York State College of Agriculture, Cornell University, Ithaca, New York.

b/ Represents 7-year average of farm account records covering a varying number of flocks, averaging 13 flocks per year. See Farm Business Notes, No. 249, September 24, 1943, University of Minnesota, St. Paul, Minnesota.

c/ Based on records of 49 flocks representing 179,095 poults started, with a mortality of 27.2 percent. See An Economic Analysis of Turkey Production in Utah, Bulletin 318, Utah State Agricultural College, Logan, Utah.

d/ Based on flocks in Stanislaus County, averaging 4,402 poults started, with a mortality of 22.5 percent. See Turkey Production in California, Circular 110, revised March 1944, California Agricultural Extension Service, University of California, Berkeley, California.

Although the total supply of feed grains and concentrates per animal unit on farms at the beginning of the 1946 season are only slightly smaller than for 1945, supplies are not well distributed by areas and will probably not move as readily to short areas as they did in prewar years. An unusually high proportion of the corn crop was frost-damaged and will be suitable only for certain kinds of livestock feeding. Producers of all classes of livestock products are expected to compete keenly for the limited available supplies of protein feeds. Thus, profitable turkey production may require more careful advance planning of feed supplies than at any time since 1936.

Cost of poults - The larger part of the United States turkey crop in recent years has come from growers who buy their birds as day-old poults. This practice requires a much smaller investment in equipment than where a flock of breeders is carried through the winter and eggs are home-produced and home-hatched. It also makes possible larger flocks of uniform age. Competition tends to fix the price charged for day-old poults at about the cost of efficient operators producing their poults on the home farm. Prices paid by farmers for poults have varied considerably by States, due in part to varying costs in feeding and caring for breeding stock through the winter and spring. Following are the average prices paid for poults in important turkey producing States:

<u>State</u>	<u>Cents per poult</u>	
	<u>1944</u>	<u>1945</u>
Pennsylvania	63	73
Minnesota	81	84
Utah	85	88
California	72	78
Texas	51	64
United States	69.7	75.9

Because of relatively high mortality of young turkeys, poult costs per bird marketed is much higher than the price per poult purchased. United States average percentage of young turkeys lost based on number purchased or home-hatched was 25.9 in 1944. Assuming all poults whether purchased or home-hatched cost about the amount shown in this schedule, poult costs per bird marketed, therefore, approximated 94 cents in 1944 (69.7 cents + .741, the number matured per poult started). For an 18-pound turkey sold at the average farm price in 1944, the average poult cost was 15 percent of sales price. Regional data on death losses for 5 recent years are provided in table 4.

Turkey prices affected by level of consumer income - Turkey prices received by growers depend primarily upon consumer income and on the relative size of the turkey crop. Turkeys or turkey meat are not exported or imported in quantity, hence turkey prices in this country are determined largely by the domestic supply and demand. Since 1929, prices received for turkeys have followed the index of nonagricultural income rather closely, as illustrated in chart 3. In the few instances in which the annual average price of turkeys was noticeably different from

the price which might have been expected from the trend of consumer income, the difference can be attributed largely to relatively large or small turkey production in that year. In 1935, for example, the index of turkey prices was much higher than the nonagricultural income index but the per capita production of turkeys was lower in that year than the average of the 2 preceding years. Per capita supplies of chicken were also lower in 1935 than in a number of preceding years. In 1936 the turkey price index declined steeply while consumer income rose, but the per capita turkey crop was 30 percent above the average of the 2 preceding years. Again in 1940 turkey prices were greatly below the level indicated by the high and steeply rising consumer income, but the turkey crop was of record size and 33 percent greater than the preceding 5-year average. Thus, the experience of 17 years indicates that, to an important extent, the level of consumer income and the size of the turkey crop account for fluctuations occurring in yearly average turkey prices. Changes in supplies of chicken, relative to consumer income, also have an important effect on turkey price.

Per capita consumption of turkey has increased rapidly - Pounds of turkey consumed per capita increased rapidly during the 1930's averaging 3.0 in 1939 compared with 1.7 in 1930 (chart 3). By 5-year periods, annual per capita consumption has averaged as follows:

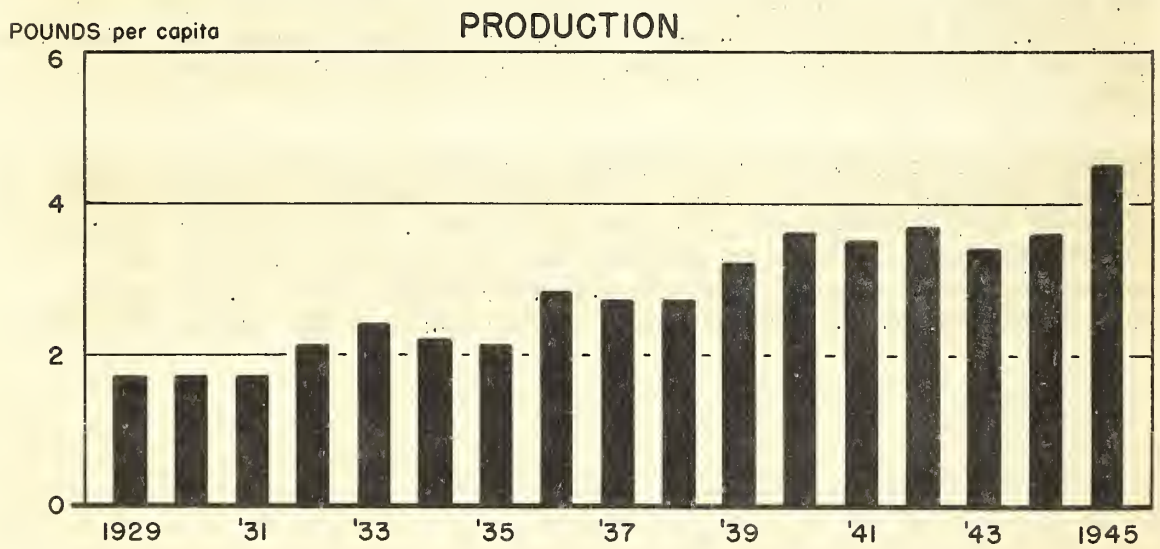
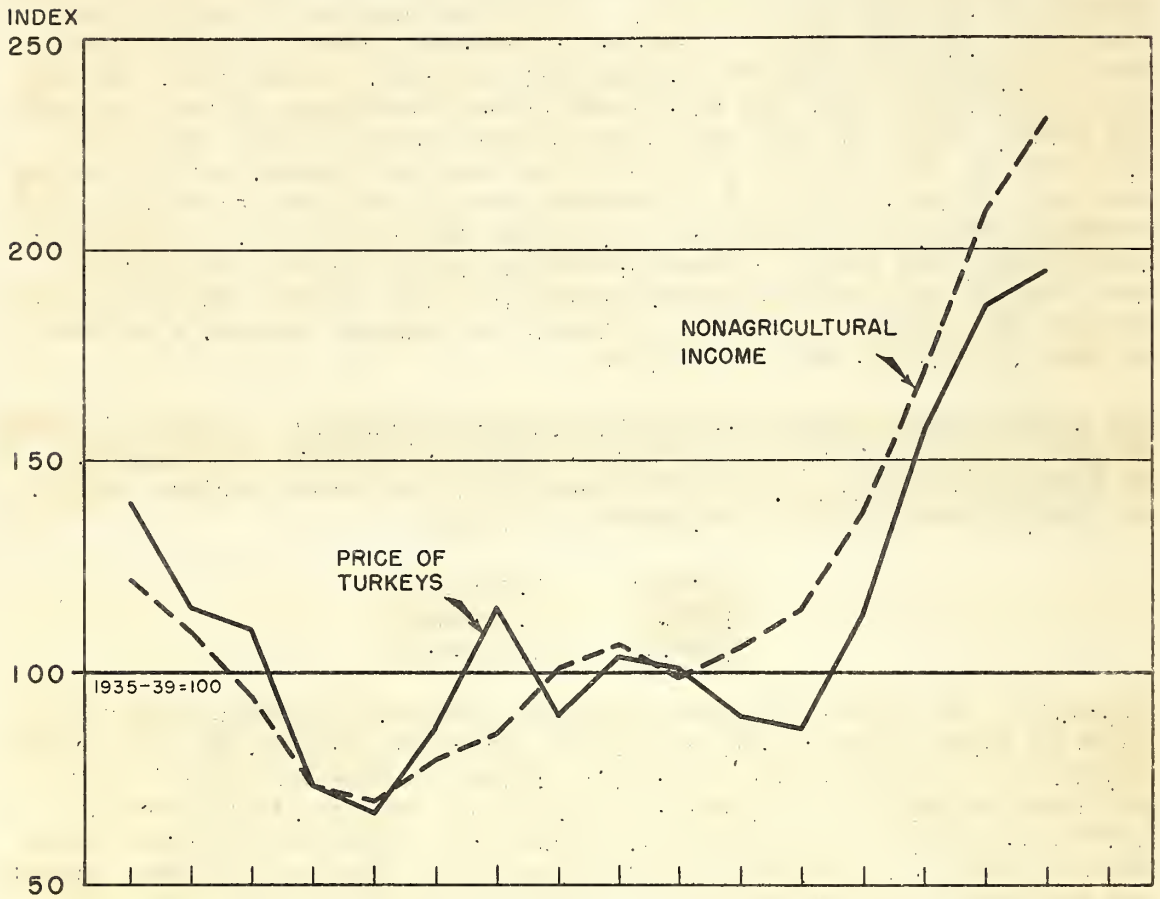
1930-34	2.0 pounds
1935-39	2.6 pounds
1940-44	3.5 pounds

During all the recent war years civilian consumers had even larger supplies of turkey than in any year of the preceding decade, yet they would apparently have taken more at ceiling prices in 1943 and 1944 if more had been available. With reduced noncivilian takings, the record 1945 turkey crop will provide about 4.5 pounds per capita or 22 percent more than in 1942, the previous all-time high year. Apparently turkey growers are encountering no serious price weakness in marketing the 1945 turkey crop although Government buying of turkeys has been reduced and civilians have had larger supplies of other meats during the closing months of 1945.

Turkey production may continue 1930-44 uptrend but may be below exceptional 1945 crop for some years - Turkey has been only a small percent of total meat consumption in the United States. The following data on per capita meat consumption indicate that turkey made up less than 2 percent of meats consumed 1930-39 and represented only a little more than 2 percent of the civilian meat supply during 4 war years, 1942-45:

CHART 3

FARM PRICE AND PER CAPITA PRODUCTION OF TURKEYS AND NONAGRICULTURAL INCOME UNITED STATES, 1929-45



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United States Civilian Per Capita Consumption of Turkey, Chicken,
and all Red Meats

(Pounds, dressed weight; last column represents percent turkey is
of all meats)

<u>Period</u>	<u>Turkey</u>	<u>Chicken</u>	<u>All red meats</u>	<u>All meats</u>	<u>Percent turkey</u>
1930-34	2.0	19.9	133.8	155.7	1.3
1935-39	2.6	17.9	125.6	146.1	1.8
1942	3.7	21.5	137.9	163.1	2.3
1943	3.4	28.0	136.3	167.7	2.0
1944	3.3	23.6	149.6	176.5	1.9
1945 <u>1/</u>	4.5	25.0	130.0	159.5	2.8

1/ Indicated.

These data indicate that a 50 percent or even a 100 percent increase in the supply of turkey would increase the total meat supply but little. Likewise, if substantially enlarged turkey production were to replace some of the red meats, the consequent reduction in the other meats would be very small, percentagewise.

Certain factors other than effect on total meat supply tend, however, to limit expansion in the market for turkeys. The most important limiting factor is the relatively large size of the individual turkey. While other meats are regularly sold at retail in quantities conveniently small for the average household, ways have not been developed for merchandising turkey attractively in units other than whole or half birds. What this means to the consumer may be seen from the following 1944 data for important turkey producing States:

<u>State</u>	<u>Average live weight of birds marketed</u>		<u>Estimated average dressed weight a/</u>		<u>Farm price of live birds of indicated weights</u>	
	<u>Toms</u>	<u>Hens</u>	<u>Toms</u>	<u>Hens</u>	<u>Toms</u>	<u>Hens</u>
	<u>pounds</u>	<u>pounds</u>	<u>pounds</u>	<u>pounds</u>	<u>dollars</u>	<u>dollars</u>
California	23.6	14.0	17.5	10.4	7.95	4.72
Minnesota	20.7	12.3	15.3	9.1	6.73	4.00
Iowa	21.7	13.3	16.1	9.8	7.29	4.47
Pennsylvania	19.3	12.7	14.3	9.4	7.99	5.26
United States	20.3	13.1	15.0	9.7	6.88	4.44

a/ Computed from reported average live weights, assuming that dressed weights will average 74 percent of live weights.

Weight of turkeys marketed cannot be appreciably reduced by selling them younger; until properly matured, their quality is less desirable and unit costs of production are higher. Promotion of the sale of half turkeys, undertaken on a large scale for the first time this year, reportedly succeeded in providing a large number of consumers with turkey during

the holidays who would otherwise not have used turkey. Instituted by producers' associations, the campaign to interest consumers in turkey and acquaint them with methods of preparing half turkeys had the cooperation of radio, newspapers, magazines, and retail stores. How extensively this method of marketing turkeys may be developed in more normal years when consumers have forgotten wartime food rationing and the supply of all meats throughout the year is more plentiful in relation to demand still remains to be seen. A limiting factor is that even half of a normally matured young tom is still a sizeable purchase and requires larger cooking space than most cuts of meat, while a half bird can never be quite as attractive as the traditional whole turkey.

Another approach to the problem of providing smaller units of turkey on the retail market may be seen in efforts to develop breeds of turkeys which mature at somewhat lighter weights than the now dominant Broad-breasted Bronze breed. Standard weights of White Holland turkeys are about a fourth less and of the Beltsville Small-Type White about a third less than standard weights of Broadbreasted Bronze. A limiting factor with the smaller breeds is that poult costs and possibly some other costs per pound matured are somewhat higher. Poult costs of the smaller breeds would be reduced if these breeds could be developed as more prolific layers.

Familiarizing restaurants and other institutions with the favorable costs per serving of turkey relative to costs of other meats may expand the outlet for heavy young toms and provide a year-round market for large turkeys placed in storage in the fall and winter marketing season.

Since no one can be certain how well these and other plans for expanding the turkey market may develop, continued production in the next few years at the greatly expanded 1945 rate would probably be hazardous. It is not inconceivable, however, that per capita turkey consumption may continue on the uptrend at about the average rate of expansion occurring in 1930-44, during which time per capita consumption increased something like 30 percent each 5 years. For 1946 the United States Department of Agriculture is suggesting a production goal of 39.7 million birds compared with 44.2 million produced in 1945 and an average annual production of 34.0 million in 1940-44.

Price support for turkeys as a Steagall commodity - In earlier periods and in recent years the United States farm price of turkeys per pound of live weight has averaged as follows:

<u>Year or period</u>	<u>Annual average farm price</u> (Cents)
1909-14	14.4
1935-39	17.4
1941	19.8
1942	27.4
1943	32.6
1944	33.9
1945 (January-October)	33.3

During 1943-45 turkey prices were close to ceiling levels. It now seems probable that ceilings will be of little concern to turkey growers in the early postwar years. Interest of producers is turning now to the question whether the Steagall Amendment to the Price Stabilization Act provides practical protection against ruinously low prices. Under this law, turkey prices must be supported during 1946 and 1947 at not less than 90 percent of parity. What this means to growers may be seen from the following computations. If the index of prices paid by farmers were to remain at 175 (October 1945 level) the required minimum support for turkeys, United States average farm price, will be 22.7 cents ^{1/} or about one-third less than 1943-45 average prices. If the index of prices paid should be 5 percent or 9 points higher, 90 percent of parity for turkeys would be 23.8 cents.

Future trend of turkey prices - Production of turkeys will probably continue through 1946 at relatively high levels because of the favorable prices and profits of recent years and the indicated adequate grain and feed supplies per animal unit on farms. The farm price of turkeys is not expected to be moderately lower than the record high prices of recent years, because of increased total meat supplies, smaller takings for noncivilian uses and reduced consumer income. The spread in prices between the most desirable quality and weights and less desired kinds will probably be much greater than in recent years. Supplies of chicken meat for civilians in 1946 are not expected to differ greatly from 1945 supplies. Barring a serious decline in industrial activity, turkey prices are not expected to fall so much as to reach the minimum support level prescribed by the Steagall Amendment. Since only insignificant quantities of turkey are either exported or imported, growers in the United States are concerned only with the domestic supply and the domestic market.

As has been indicated, the price of turkeys in future years, like the price of most farm products, will depend on the extent to which industrial production, employment, and consequent nonagricultural income are maintained at favorable levels. In "What Peace Can Mean to American Farmers" ^{2/} committees working on postwar programs have computed the level of farm prices under certain very definite assumptions. Under the assumption of full employment, a national income of 150 billion dollars and a price level about like 1943, the committees estimated the price for turkeys, and two principal grains entering into turkey production as indicated in the right-hand column in the following tabulation:

^{1/} Computed as follows: .90 x 1.75 x 14.4 cents = 22.7 cents.

^{2/} USDA Misc. Publ. No. 562, issued May 1945.

	<u>1935-39 average</u>	<u>1943</u>	<u>Estimate, 1950, under stated conditions</u>
Turkeys, annual average farm price per pound	\$0.17	\$0.30	\$0.26
Corn, per bushel	.65	1.12	.90
Wheat, per bushel	.81	1.36	1.10
Turkey-corn ratio	14.6	15.0	16.2
Turkey-wheat ratio	12.6	13.2	14.2

Since turkey represents a semiluxury to most consumers, turkey prices and turkey-feed price ratios might be affected more adversely than those of chickens and the principal meat animals if conditions of serious unemployment and much lower national income should occur.

Table 3 - Cash receipts from farm marketings: Turkeys, all poultry and poultry products, and all farm marketings, 1935-39 average, and annual data, 1940-44

Year or period	Turkeys	All poultry and poultry products	All farm marketings	Turkeys as a percent of all farm marketings	All poultry and products as a percent of all farm marketings
	(Million dollars)			(Percent)	
1935-39 average	63	811	7,973	.79	10.2
1940	78	810	8,343	.93	9.7
1941	98	1,107	11,157	.88	9.9
1942	145	1,652	15,316	.95	10.8
1943	160	2,446	19,339	.83	12.6
1944	198	2,295	19,790	1.00	11.6

Table 4 - Young turkeys lost as a percent of total numbers bought and home-hatched, United States, by regions, 1940-44

Region	1940	1941	1942	1943	1944
	(Percent)				
North Atlantic	19	17	19	23	23
East North Central	19	21	23	23	23
West North Central	29	24	28	29	23
South Atlantic	28	27	31	38	30
South Central	31	45	43	44	38
Western	20	22	21	21	22
United States	25.9	27.8	28.8	29.7	25.9

