UNITED STATES DEPARTMENT OF AGRICULTURE
BUREAU OF AGRICULTURAL ECONOMICS
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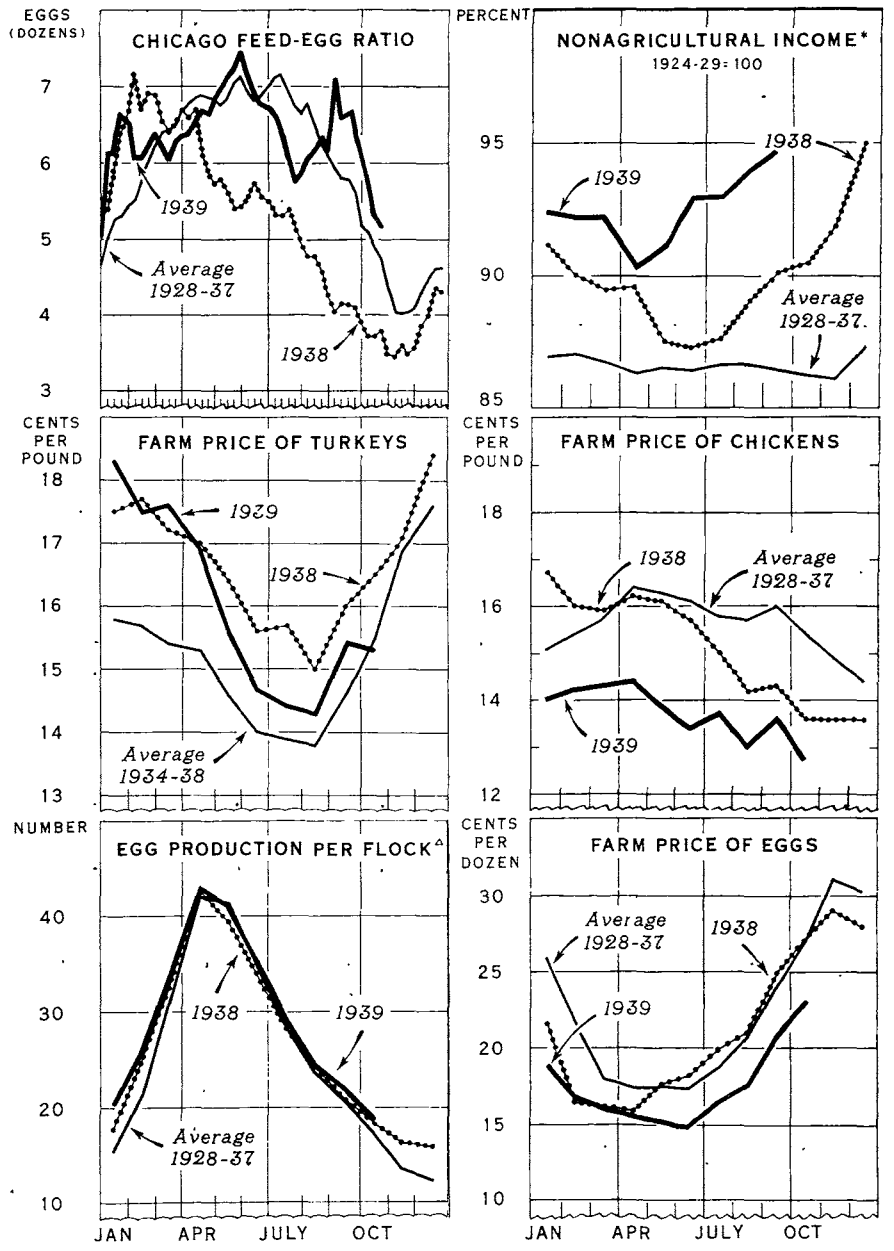
THE POULTRY AND EGG SITUATION

THE POULTRY AND EGG SITUATION AT A GLANCE



*INDEX NUMBERS ADJUSTED FOR SEASONAL VARIATION △ ON 1ST DAY OF MONTH

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The feed-egg ratio at Chicago was much more favorable to poultry producers in October than in September, but was less favorable than during October of last year or than the 1928-37 average for October.

Storage stocks and receipts of dressed poultry are increasing seasonally at about the same rate as a year earlier. The out-of-storage movement of shell eggs during October was somewhat greater than a year ago. On October 28 stocks of shell eggs at 26 markets were 7 percent above stocks a year earlier. Receipts of eggs have been declining seasonally.

Prices received by farmers for chickens on October 15 were less than 1 cent per pound below prices on October 15 last year, and about 2-1/2 cents below the 1928-37 average. Turkey prices were about 1 cent per pound below those of a year earlier. Egg prices on October 15 were about 4 cents per dozen below both last year's prices and the 1928-37 average.

The following data bring up to date the tables given in the October issue of the Poultry and Egg Situation report but not included in the Outlook report.

	Unit	Week ending as of 1939				
		Sept. 30	Oct. 7	Oct. 14	Oct. 21	Oct. 28
Feed-egg ratio at Chicago						
Av. 1928-37	Dozen	5.63	5.19	5.10	4.89	4.72
1938	"	4.10	3.91	3.71	3.71	3.79
1939	"	6.39	6.10	5.79	5.29	5.13
Receipts of dressed poultry at 4 markets						
Av. 1928-37	1,000 lb.	6,351	6,733	6,980	7,366	7,473
1938	"	6,981	7,676	8,050	8,558	8,817
1939	"	7,530	8,291	8,526	7,733	8,438
Storage stocks of frozen poultry at 26 markets						
Av. 1928-37	"	38,680	40,747	43,004	45,704	48,698
1938	"	42,394	44,877	47,184	50,227	54,344
1939	"	43,755	44,196	49,458	51,910	54,948
Receipts of eggs at 4 markets						
Av. 1928-37	1,000 cases	175.1	172.1	152.6	140.3	136.6
1938	"	136.0	142.5	145.1	135.4	123.1
1939	"	155.2	132.9	125.3	117.0	125.4

	Unit	September			October		
		Average 1928-37	1938	1939	Average 1928-37	1938	1939
Farm price of chickens per lb.	Cents	16.0	14.3	13.6	15.4	13.6	12.7
Farm price of turkeys per lb.	"	--	16.0	15.4	17.9	16.5	15.3
Farm price of eggs per doz.	"	23.9	24.9	20.6	27.0	27.1	22.9
Nonagricultural income index	Percent	86.4	90.1	94.8	86.2	90.5	--

THE ANNUAL OUTLOOK REPORT IS ATTACHED.

UNITED STATES DEPARTMENT OF AGRICULTURE
Bureau of Agricultural Economics

Release Date
November 10, A.M.

THE OUTLOOK FOR POULTRY AND EGGS (INCLUDING TURKEYS) FOR 1940

After considering all important elements in the poultry, egg, and turkey outlook for next year, and assuming that there will be a considerable increase in the general level of consumer demand, the Bureau of Agricultural Economics expects:

The feed-egg ratio to continue less favorable from the poultry producers' viewpoint than last year and possibly less favorable than the 1928-37 average.

Hatchings during 1940, therefore, to be somewhat smaller than the large hatch of 1939.

Laying flocks in 1940 to be somewhat larger than in 1939.

Total egg production to be slightly larger than a year earlier.

Egg marketings in 1940, therefore, to be slightly larger than in 1939.

Egg prices to remain less favorable than a year earlier to producers for the remainder of 1939 because of larger storage holdings and some increase in current production. The effect of larger consumers' income on prices during 1940 as compared with a year earlier is expected to more than offset the effect of any probable increase in production unless winter weather conditions are unusually mild.

Marketings of poultry meat in the first half of 1940 to be larger than in 1939 because of the heavy 1939 hatch of both chickens and turkeys. Poultry marketings in the last half of 1940 to be smaller because of the expected smaller 1940 hatch.

Fall and winter broiler production to be somewhat larger than last year's record high production unless relative feed costs increase considerably. If production increases, the situation is likely to be less favorable for producers than in the preceding year.

Storage stocks of poultry meat in early 1940 to be larger than in 1939. The into-storage movement in late 1940 to be smaller than in 1939 because of smaller marketings.

Prices of chickens to be less favorable in the winter of 1939-40 than a year earlier because of greatly increased marketings. In the spring of 1940, the effect of increased consumer incomes on prices may offset the effect of the expected larger marketings as compared with a year earlier. The expected

decrease in marketing in the latter half of 1940 will tend to increase prices as compared with 1939.

Cash farm income from poultry and eggs in 1940 to be larger than in 1939 because of improved consumer demand. However, feed costs will also be higher.

Turkey prices through the remainder of this season to be less favorable to producers than a year earlier.

Turkey production in 1940 to be somewhat smaller than the record crop of 1939, which was 22 percent above last year and 15 percent above the previous record high production in 1936.

Possible Economic Effects of Present War on Domestic Poultry and Egg Industry

Any influence which the European War may have on prices for poultry and eggs will be largely a result of its effects on our domestic economy, since it is not probable that exports of poultry meats or of eggs and egg products will increase within the next year to a sufficient extent to affect prices materially. Imports in 1938 were less than one-fourth of 1 percent of domestic production and have been equally small so far in 1939 and, therefore, need not be considered.

The general stimulus of the war to domestic business activity and consumer incomes will add to the domestic demand for poultry and eggs, but during the next 6 to 12 months the poultry industry probably will not be greatly affected by the war.

Effects of the World War

In contrast to some of the other agricultural products, eggs and poultry were not important in our export trade to Europe during the World War. At no time during or immediately following that war did the value of egg exports represent more than approximately 2-1/2 percent of the cash farm income from this product. The following table shows how these exports varied during this period. Exports of poultry meat were even less important than those of eggs, and never represented more than 1-1/2 percent of the farm cash income from this source. The great majority of these exports were shipped to Latin American countries, with only a small percentage going to Europe. (The Latin American countries have greatly increased their production of poultry and eggs since the World War, so this market will be available only to a limited extent during the present war.)

United States exports of eggs and egg products and of poultry meat, fiscal year beginning July 1, 1909-20

Year beginning July 1	Exports of shell eggs	Exports as a percentage of all eggs sold by farmers	Value of exports of eggs and egg products	Value as a percentage of the value of all eggs sold by farmers	Value of exports of poultry meat	Value as a percentage of the value of all chickens sold by farmers
	1,000 dozen	Percent	1,000 dollars	Percent	1,000 dollars	Percent
Average 1909-13	13,170	.80	2,945	.91	899	.72
1914	20,784	1.22	5,093	1.51	1,188	.87
1915	26,396	1.53	6,345	1.76	1,561	1.12
1916	24,926	1.50	7,641	1.65	1,327	.82
1917	18,969	1.15	7,693	1.35	1,241	.63
1918	28,385	1.60	12,786	1.84	3,799	1.51
1919	38,327	2.11	19,432	2.51	1,628	.54
1920	26,960	1.47	11,453	1.82	1,065	.36

The major effect of the World War on the poultry industry was the result of changes in the general price level. Prices of specific commodities seldom change at the same rate when violent changes in the general price level take place. However, prices for certain groups of commodities do change in a similar way.

Following the start of the World War in August 1914, there was a brief upward movement in commodity prices, similar to that which has occurred since the outbreak of the present war. Following the flurry at the beginning of the World War, there was no significant change in prices of agricultural commodities for about 2 years. In 1916 the index of wholesale food prices began to rise and prices of eggs and chickens followed. The rise in egg prices became apparent in September of that year - some 2 years after the war started. The all-time high in farm prices for eggs was reached in December 1919 when they were 69.6 cents per dozen. This was about 18 cents a dozen higher than the farm price of eggs at the time of the signing of the Armistice, 13 months before. The all-time high of chicken prices was reached in 1920 when, during April and July, the farm price was 28.4 cents a pound. As a matter of fact, the post-war period from 1918 through 1920 was one of much higher prices for poultry and eggs than was the period of actual war operations.

Wholesale food prices and farm prices of poultry feed, chickens and eggs, 1910-23

Index numbers (1910-14 = 100)

Calendar year	Wholesale prices	Prices received by farmers		
	All foods	Poultry feed 1/	Eggs	Chickens
	Percent	Percent	Percent	Percent
Average 1910-14	100.0	100.0	100.0	100.0
1910	100.6	98.6	106.1	100.9
1911	96.1	92.5	88.8	93.2
1912	103.6	104.3	102.5	94.0
1913	99.5	95.4	98.5	105.1
1914	100.3	109.1	104.1	107.7
1915	101.4	113.9	98.5	100.9
1916	117.4	127.0	112.2	115.4
1917	162.0	218.1	161.4	144.4
1918	184.7	236.5	182.7	185.5
1919	200.8	239.5	209.6	210.3
1920	213.0	220.9	220.8	224.8
1921	140.5	92.5	143.7	178.6
1922	135.8	95.4	126.9	164.1
1923	143.7	119.4	134.5	163.2

1/ Includes corn, wheat, oats, and barley, weighted in the same manner as in the feed-egg ratio.

Feed costs were high in relation to chicken and egg prices during the period when general prices were increasing rapidly; feed costs were low in relation to chicken and egg prices during the period of declining prices in the post-war depression. As a result of the unfavorable feed-egg ratio, farm production of eggs dropped off slightly from 1916 to 1918. Poultry producers were in a less favorable position during the actual period of the war than were producers of some of the other staple farm commodities.

Possible Effects of the Present War

It is not probable that exports of poultry meats or of eggs and egg products will increase within the next year to a sufficient extent to affect prices materially.

During the last few years, most European countries have been attempting to become self-sufficient so far as their supplies of agricultural commodities are concerned and this has been true in connection with poultry and eggs. At the outbreak of the previous war many of the belligerents were unprepared with respect to food supplies. This has not been true in the case of the present

war, as they have been accumulating stocks of some foods for just such a contingency. Furthermore, eggs and poultry hardly would be considered basic food commodities for war purposes in contrast with more staple commodities. Consequently, the immediate need for imports into these countries has diminished.

Many of the countries in Europe that are neutral in the present conflict have been on an export basis for poultry and eggs. If these countries have difficulty in obtaining feed supplies, their production of poultry products may be somewhat reduced but this does not necessarily indicate that the United States will be able to increase its exports correspondingly since the belligerent nations may curtail their consumption of poultry and eggs.

The growth of the frozen and dried egg industry in the United States during recent years is a factor that could tend to increase exports slightly more during the present war than they increased during the World War. About 4 percent of the total eggs produced in the United States from 1933 to 1937 were used in a dried or frozen form. Production of frozen and dried eggs could be expanded quickly, but it is not expected that any considerable proportion of the domestic egg production will be exported in this form at least within the next year.

It is evident that any influence that the war may have on poultry and egg prices will be largely a result of its effects on our domestic economy. The general stimulus to domestic business activity and consumer incomes will add to the domestic demand for poultry and eggs. During the next 6 to 12 months, however, the poultry industry probably will not be greatly affected by the war.

The feed situation

Feed supplies for livestock are ample again this season. The total supply of all grains, including wheat and wheat products available for feeding and carry-over, will be about 6 percent above the average of the predrought period, 1928-32, and about 4 percent larger than the 1938 supply. Feed-grain production was abundant in most of the Corn Belt States but poor in the plains area from North And South Dakota to Texas and in portions of the Southern, North Atlantic, and Far Western States. The unequal distribution of the current production will be partly adjusted by a heavy movement of feeder stock into surplus-feed areas. The supply of feed grains per grain-consuming animal unit, after allowing for an increase of about 7 percen in livestock numbers, is estimated to be about 3 percent smaller than a year ago but 8 percent larger than the average for 1928-32.

During September, 59 percent more eggs were required to purchase 100 pounds of poultry feed at Chicago prices than a year earlier and 12 percent more than the 1928-37 average. Almost 2-1/2 dozen more eggs were required to buy 100 pounds of feed in this month in 1939 than in 1938. The feed-egg ratio will probably continue less favorable to producers than last year and may be less favorable than the 1928-37 average.

The feed-egg ratio at Chicago, by selected weeks 1/
(Dozens of eggs required to buy 100 pounds of poultry ration)

Period	Week ending as of 1939											
	Jan. 7	Feb. 4	Mar. 4	Apr. 1	May 6	June 3	July 1	Aug. 5	Sept. 2	Oct. 7	Nov. 4	Dec. 2
	Dozen	Dozen	Dozen	Dozen	Dozen	Dozen	Dozen	Dozen	Dozen	Dozen	Dozen	Dozen
Average 1928-37	4.67	5.45	6.23	6.69	6.83	7.12	7.00	6.65	6.06	5.19	4.33	4.09
1938	5.30	6.68	6.89	6.70	5.73	5.44	5.50	4.98	4.26	3.91	3.48	3.56
1939	5.02	6.52	6.38	6.35	6.84	7.45	6.71	5.85	6.13	6.10		

1/ These data are published monthly in the Poultry and Egg Situation reports issued by the Department. Feed-egg and feed-chicken ratios based on farm prices are published in its Monthly Poultry and Egg Production Report.

Hatchings

The total number of chicks hatched commercially during 1939 was the largest for any year of record. Hatchings were approximately 21 percent larger than those of 1938, and 19 percent larger than in 1936 - the previous high year of record. This increased production represents in part an increase in the number of hatchery chicks bought by producers for replacement and expansion purposes, as well as a continuation of the shift from home hatchings to commercial hatchings. Because of the shift from farm to commercial hatchings, total hatchings have increased by a smaller percentage than have commercial hatchings.

Since 1929, when records on commercial hatchings first became available, they have followed a definite 3-year cycle - 1 year down and 2 years up. Should this cycle be continued, fewer chicks will be produced by hatcheries in 1940 than were produced in 1939.

The continuation of an unfavorable feed-egg ratio for the remainder of 1939 and the spring of 1940 as compared with a year earlier will probably reduce the demand for chicks, especially as there will be fewer needed for flock-building purposes owing to some expansion in the number of pullets raised this year and retained for egg-producing purposes.

Laying flock size

On September 1, laying flocks were 2 percent below the 10-year September 1 average, but 4 percent above the relatively low level of last year.

Hens and pullets per farm flock on the first day of the month

Year	Jan.	Mar.	May	June	Aug.	Sept.	Oct.	Dec.
	Number	Number	Number	Number	Number	Number	Number	Number
Average 1928-37	86.0	82.3	75.1	70.9	64.2	63.5	68.6	79.8
1938	77.6	75.8	68.6	65.0	59.3	59.8	65.6	78.0
1939	82.8	79.8	72.2	68.5	61.3	62.1	68.0	

The increase over last year in the number of pullets entering the laying flocks indicates that flocks may be somewhat larger during the coming year than during 1939, although the present unfavorable feed-egg ratio will tend to hold any increase to small proportions. Laying flocks may average smaller on January 1, 1941, than on the same date in 1940, and about equal to the size of flocks on January 1, 1939.

Rate of lay

During 1939 there has been a continuation of the record high rate of lay per hen. The aggregate of the nine daily first-of-the-month layings from January 1 to September 1 fell below the layings for the corresponding period last year by less than 1 percent and exceeded all other years on record for the same period. Egg production per hen is expected to remain well above the 10-year average, unless winter weather conditions are exceedingly severe.

Eggs laid per 100 hens and pullets on the first day of the month

Year	Jan.	Mar.	May	July	Sept.	Total Jan.-Sept.	Oct.	Dec.
	Number	Number	Number	Number	Number	Number	Number	Number
Average 1928-37	17.9	37.7	55.5	42.8	32.7	351.8	25.5	15.2
1938	22.7	42.2	58.1	46.5	35.3	389.0	28.2	19.9
1939	24.6	41.4	57.6	45.9	36.0	386.5	27.5	

Total egg production

Total egg production from January 1 to September 1, 1939, as reflected by sample farm flocks, was 4 percent larger than during the same period of

last year and 6 percent larger than the 1928-37 average. Increased numbers of layers, as compared with last year, have more than offset the slight decrease in the rate of lay per bird.

Eggs laid per farm flock on the first day of the month

Year	Jan.	Mar.	May	July	Sept.	Total Jan.-Sept.	Oct.	Dec.
	Number	Number	Number	Number	Number	Number	Number	Number
Average 1928-37	15.4	31.1	41.3	28.3	20.4	258.7	17.3	12.3
1938	17.8	32.5	39.4	28.2	20.7	264.6	18.3	15.9
1939	20.4	33.3	41.1	29.0	21.7	274.2	18.5	

With some increase indicated in the number of layers next year and no great change probable in the rate of lay per bird, total egg production during the coming year may be slightly larger than in 1939. Because of the expected smaller hatch in 1940, total egg production in the last few months of that year may be smaller than in 1939.

Egg marketings

As a result of increased egg production, egg marketings during the first 8 months of 1939 were 8 percent larger than in 1938.

Unless weather conditions are severe during the winter, marketings during the remainder of 1939 and most of 1940 will probably be slightly larger than in the previous year. Egg marketings in the last few months of 1940 may be smaller than in 1939 and about equal to marketings in 1938.

Egg storage

Stocks of shell eggs in cold storage in the United States at the peak of the 1939 season, August 1, were larger than a year ago by about 600,000 cases, or 10 percent. Stocks of frozen eggs were larger by an amount equivalent to about 260,000 cases of shell eggs, or 7 percent. Combined stocks of shell and frozen eggs were about 8 percent above the abnormally low stocks of last year but 8 percent below the 1928-37 average. In the latter part of this report some of the reasons why storage stocks, particularly of shell eggs, have been smaller in recent years than in former years will be discussed.

Supplies of eggs available for storage in 1940 are expected to be slightly larger than a year earlier. The outcome of this year's egg-storage

deal will affect the quantity of eggs stored this spring. Should the present deal turn out favorably, storage stocks of shell and frozen eggs in 1940 may be about the same or slightly larger than in 1939.

Storage stocks of shell and frozen eggs, converted to shell-egg equivalent 1/

Year	Jan. 1	Mar. 1	May 1	Aug. 1	Sept. 1	Oct. 1	Dec.1
	1,000 cases	1,000 cases	1,000 cases	1,000 cases	1,000 cases	1,000 cases	1,000 cases
Average 1928-37	2,730	1,421	6,310	12,138	11,458	9,968	4,947
1938	3,951	2,817	6,515	10,278	9,514	7,915	3,670
1939	2,099	1,436	5,896	11,149	10,482	8,900	

1/ Cases of 30 dozen eggs.

Egg prices

Prices received by farmers for eggs were lower than last year during most of the first 8 months of 1939. The effect on prices of larger consumers' income was more than offset by larger egg production, particularly in January and from April through June. Since July 1, larger storage stocks and some increase in current production have kept prices below last year. During the remainder of 1939, the price effects of larger storage stocks and increased production may continue to be only partly offset by the effect of larger consumers' income, as compared with 1938. Prices will probably be higher in 1940 than in 1939 because of the expected increase in consumers' incomes.

Price per dozen received by farmers for eggs

Year	Jan. 15	Mar. 15	May 15	July 15	Sept.15	Nov. 15
	Cents	Cents	Cents	Cents	Cents	Cents
Average 1928-37	25.9	18.0	17.5	18.7	23.9	31.1
1938	21.6	16.2	17.6	19.9	24.9	29.0
1939	18.8	16.0	15.2	16.5	20.6	

Marketings of poultry meats

Poultry marketings in the first 8 months of 1939 were 24 percent above those in 1938 mainly because of the increased number of hens sold from the larger laying flocks and the increased production of winter broilers.

Because of the heavier hatch and the larger laying flocks now on hand, market receipts for the remainder of 1939 and the first months of 1940 are expected to continue above those of the previous year. The larger production of turkeys will also increase receipts of dressed poultry in this period. Receipts of dressed poultry during the spring of 1940, will partially depend on the price of eggs then prevailing. Laying flocks are expected to be slightly larger next spring than last, so if farmers sell the same percentage of hens as in 1939, receipts of poultry may be slightly larger. Because of the prospective smaller hatch in 1940, marketings of poultry during the last half of that year are likely to be smaller than in 1939.

Fall and winter broilers

Some further increase in the number of fall and winter broilers to be raised in the principal commercial broiler-producing areas in the East is in prospect for the coming fall and winter, according to reports received from representative producers. Despite the fact that the past season was one of record-high production and that prices were comparatively low, many commercial producers were able to realize some profit in their operations. This was possible partly because of low feed prices and partly through efficient management in commercial operations. Any further increase in feed costs will tend to modify present indications of production for the coming season. Should any material expansion of production occur, it probably would more than offset whatever price advantage would be gained through a more favorable demand situation.

Storage stocks of poultry meats

Stocks of frozen poultry at the peak in early 1940 are expected to be heavier than in 1939 but lighter than the record holdings in 1937. Because of the larger production of chickens and turkeys in 1939, the net into-storage movement during the period of accumulations from September to January is expected to exceed that of a year ago but to be smaller than the movement in 1936.

The into-storage movement of poultry during the latter part of 1940 is expected to be smaller than that of 1939.

United States storage stocks of poultry meats

Marketing season	Sept. 1	Net into-storage movement Sept. 1 - Jan. 1	Jan. 1
	1,000 pounds	1,000 pounds	1,000 pounds
10-year average (1928-29 to 1937-38)	46,368	79,426	125,794
1936-37	65,488	122,399	187,887
1937-38	63,733	59,767	123,500
1938-39	54,941	84,167	139,108
1939-40	63,789		

Chicken prices

During the first 8 months of 1939, prices received by farmers for chickens have been considerably below both last year and the 1928-37 average. The effect on prices of larger market supplies of poultry during the remainder of the year and of larger supplies of meats competing with poultry probably will be only partly offset by the effect of larger consumer incomes.

Price per pound received by farmers for chickens

Year	Jan.15	Mar.15	May 15	July 15	Sept.15	Nov.15
	Cents	Cents	Cents	Cents	Cents	Cents
Average 1928-37	15.1	15.7	16.3	15.8	16.0	14.9
1938	16.7	15.9	16.1	15.0	14.3	13.6
1939	14.0	14.3	13.9	13.7	13.6	

Storage supplies of poultry in the first half of 1940 will probably be considerably larger than in 1939 and fresh supplies may be slightly larger. However, consumers' incomes may increase sufficiently to offset the effect of these larger supplies.

The expected decrease in 1940 hatchings will tend to increase prices in the latter half of 1940 as compared with 1939.

Long-Time Factors in the Chicken and Egg Outlook

The expansion of the poultry and egg industry during 1939 is expected to lead to some contraction of production in the latter part of 1940. The swing of egg production during the next 5 or 10 years, however, is likely to be upward from the relatively low levels of the period from 1932 to 1936.

The peak in the production of eggs on farms of about 39 billion was reached in 1930. Because of droughts and unfavorable economic conditions, production declined to about 33 billion in 1935 but it increased to 37.6 billion in 1937. In view of the large volume of egg production of the poultry industry at its peak in 1930, it seems reasonable to expect some further increase in production. With the increased production of eggs per hen, a corresponding increase in the number of layers is not expected. The increase in population during the last decade is a further factor requiring some increase in total production if the former per capita consumption is to be regained. Per capita consumption of eggs in 1938 was about 25-1/2 dozen; of chickens it was about 20 pounds (live weight) as compared with an average of 28 dozen eggs and 23 pounds of chicken from 1925 to 1929.

Specific factors pointing to an increased output of eggs are (1) a long-time tendency toward a higher rate of lay per bird, (2) no further increase in present heavy mortality rates, and (3) a continuation of the trend toward more efficient production methods.

A trend toward more commercialized methods is important in the production of poultry meats. The development of more efficient egg-production methods has reduced the supply of poultry meats arising as a byproduct of egg production. The growing practice of sexing baby chicks is further reducing the supply of poultry meat from commercial egg production. This has encouraged the production of broilers as a specialized enterprise and may possibly lead to similar methods in the production of roasters and heavier meat birds. Commercial production of fall and winter broilers has increased to such an extent that the former wide margin between prices of "out-of-season" broilers and prices of hens has been almost completely eliminated.

Regional Trends in Egg Production

In 1938, egg production was below the record high average of 1927-31 in all regions except the North Atlantic and the East North Central States. The West North Central States showed the greatest reduction, largely as a result of the droughts in 1934 and 1936. Egg production in this area increased in 1938, and more normal crop conditions there during the next few years will undoubtedly continue to bring about a recovery of production.

Egg production in the highly commercialized far Western States has declined in contrast to an increase in the similarly commercialized North Atlantic States as compared with the 1927-31 average. One reason for the decrease in production in the far West has been the low level of prices in recent years, which has made it difficult for eggs from that area to bear the cost of transportation to eastern markets. Another factor has been the increase in the proportion of high-quality eggs produced in other areas. Such eggs now compete strongly in the eastern metropolitan markets with eggs from the Pacific Coast. Flock sizes increased considerably in the Western States during 1939, but it is not probable that the proportion of eggs produced in this area will be so large in years to come as it was in the period from 1928 to 1931.

For the last 15 years, about 30 percent of the hens in the United States have been kept in the South but the rate of lay per bird has not increased quite so much as for the rest of the country. This region will probably endeavor to increase production in the future, because of a more diversified agriculture and to care for its increasing urban population.

Changes in Seasonality of Egg Supplies

Since 1930, there has been a pronounced shift in the form in which eggs are stored. This is shown by storage stocks on the first of August,

which is usually the month of peak holdings for the year. Holdings of shell eggs have declined from about 10,000,000 cases annually during the late 1920's to a little less than 7,500,000 cases annually during the last 5 years, whereas holdings of frozen eggs in those same periods have increased from a shell-egg equivalent of about 2,000,000 cases to about 4,000,000 cases. The total holdings of shell plus frozen eggs, however, have shown only a slight decrease of a little less than 1,000,000 cases.

Cold storage holdings of shell and frozen eggs on August 1

Period	Shell Eggs		Frozen Eggs 1/		Total Holdings	
	1,000 cases	Percentage change	1,000 cases	Percentage change	1,000 cases	Percentage change
Average 1925-29	10,015		1,995		12,010	
Average 1935-39	7,487	-25.2	3,876	+94.3	11,363	-5.4

1/ Shell egg equivalent.

There are at least two important reasons for the decline in storage holdings of shell eggs during recent years: (1) the increasing supply of frozen eggs, and (2) the pronounced seasonal shift that has occurred in the production of shell eggs.

There has been a consistent and rapid growth in the production of frozen eggs from the period following the World War until the present time. Before that War, eggs were broken and frozen as a means of salvaging egg meats that otherwise would be wasted because of cracked and dirty shells, or because of a lack of proper refrigeration facilities. Following the war, however, the greater convenience of frozen eggs in contrast to shell eggs began to be appreciated by large commercial users.

Not only are frozen eggs a convenience to food manufacturers, but the eating habits of Americans have been undergoing a decided change in favor of prepared foods. Home-baking of bread and pastries has practically disappeared in urban homes, and home-made salad dressings, candies, and confectioneries of all kinds have been largely supplanted by commercially-made products. Shell eggs, of course, are used exclusively in the home-made products whereas frozen eggs are used almost exclusively in the commercially-manufactured products. This has been especially true in the last few years, during which many improvements have been made in the methods of breaking, freezing, and transporting frozen eggs, as well as in the use of higher quality eggs and improved methods of sanitation.

Estimates of production of frozen eggs begin with 1921 and show an increase from 46,000,000 pounds produced in that year to 225,000,000 pounds produced in 1937, the peak year of production to date.

Frozen-egg production, 1921-38 1/

Year	Total frozen-egg products	Shell-egg equivalent	Year	Total frozen-egg products	Shell-egg equivalent
	Million pounds	Million cases		Million pounds	Million cases
1921	46	1.3	1930	185	5.3
1922	49	1.4	1931	152	4.3
1923	71	2.0	1932	138	3.9
1924	57	1.6	1933	171	4.9
1925	79	2.3	1934	198	5.7
1926	92	2.6	1935	206	5.9
1927	129	3.7	1936	208	5.9
1928	148	4.2	1937 2/	225	6.4
1929	155	4.4	1938 2/	140	4.0

1/ 1921-36 unpublished estimates made by U. S. Tariff Commission, based on original entry into cold storage.
2/ Estimated by Poultry Section, Division of Marketing and Marketing Agreements.

It will be noted in the above table that the production of frozen eggs in 1938 declined a great deal from 1937. But total consumption in 1938 did not decline so drastically as might be assumed, because large stocks of frozen eggs were carried over from the 1937 season and were consumed in 1938.

The other important reason for the decline in shell-egg holdings has been the increasing production of fresh eggs during the fall and winter, particularly during November, December, January, and February. This increase has occurred in all regions and in farm flocks as well as commercial flocks. Not only has there been an increase in the actual number of eggs produced per hen per year, but a larger proportion of the total annual egg crop is being produced in these 4 months, as shown in the following table:

Seasonal variation in eggs laid per 100 layers
on the first day of each month

(Percentage each month is of the 12-month aggregate)

Year	Jan. 1	Feb. 1	Mar. 1	Apr. 1	May 1	June 1	July 1	Aug. 1	Sept. 1	Oct. 1	Nov. 1	Dec. 1
	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent
Average 1925-27	3.7	5.2	9.8	13.4	13.8	12.4	10.6	9.4	8.2	6.3	4.0	3.2
Average 1936-38	4.9	6.3	8.7	12.6	13.2	12.0	10.3	9.0	7.8	6.3	4.7	4.2
Increase from 1925-27	1.2	1.1	-	-	-	-	-	-	-	-	0.7	1.0
Decrease from 1925-27	-	-	1.1	0.8	0.6	0.4	0.3	0.4	0.4	0	-	-

There has been a compensating decline in the proportion of the annual egg supply produced in the other 8 months of the year, particularly during the 3 peak-production months - March, April, and May. This increasing proportion of eggs laid in the 4 months, November through February, is even more pronounced in the North Atlantic region where many commercial flocks are located.

This increasing proportion of the total annual egg crop produced in the winter months has been occurring in response to high prices for fresh eggs in these months and to the increasing average production per bird. Many of the scientific advances made in feeding, breeding, and housing poultry have been directed toward obtaining more eggs per bird in the winter. As an example, it long has been the practice for extension workers to advocate earlier hatching so that pullets would come into production during the high-priced months of the fall and winter instead of during the following spring. As would be expected, the increased production during these months has caused not only a flattening out of the seasonal curve in egg production, but a flattening out of the seasonal curve in farm prices for eggs.

Seasonal variation in farm prices for eggs

(Percentage each month is of a 3-year annual average)

Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent	Per-cent
Average 1925-27	130.3	100.2	73.6	74.2	74.7	74.5	79.5	85.4	98.5	117.8	142.6	148.7
1936-38	102.3	91.4	81.3	80.0	81.2	82.9	89.9	96.7	109.6	121.1	135.7	127.9
Decrease from 1925-27	28.0	8.8	---	---	---	---	---	---	---	---	6.9	20.8
Increase from 1925-27	---	---	7.7	5.8	6.5	8.4	10.4	11.3	11.1	3.3	---	---

As is shown in the preceding table, there was much more fluctuation of the average monthly prices around the 3-year annual average price during the 1925-27 period than there was during the 1936-38 period. It is apparent from the table that prices in the latter period have not risen as high in the winter months nor fallen as low in the spring months in relation to the 3-year annual average as in the former period.

It seems probable that the proportion of the total egg production to be stored as shell eggs will continue to decline because of the increasing use of frozen eggs, as well as the increased production of eggs in the fall and winter months, but it is not probable that the decline will continue at so rapid a rate as it has maintained during the last few years. There is a point at which no more frozen eggs can be profitable substituted for shell eggs, but it is impossible to say, at present, how nearly this limit has been approached. But if per capita consumer buying power should return to somewhere near its predepression level, it seems probable that the demand for shell eggs would increase to such an extent that storage holdings could be again increased.

Turkey Situation

The number of turkeys raised in 1939 was about 32 million birds, which was 22 percent more than were raised in 1938 and 15 percent more than the previous record crop of 1936. Large increases were reported in all areas. The average live weight of turkeys when marketed is expected to

be slightly above that of last year. Although marketings began unusually early this year, the proportion of the crop to be marketed after the end of November will be larger than last year.

Number of turkeys raised

Region	Number raised			1939 as a percentage of 1938
	1931-35 average	1938	1939 1/	
	Thousands	Thousands	Thousands	Percent
North Atlantic	1,054	1,661	2,021	122
East North Central	1,700	2,692	3,382	126
West North Central	5,736	7,829	9,942	127
South Atlantic	1,956	2,166	2,445	113
South Central	5,946	5,869	6,648	113
Western	4,694	6,062	7,519	124
United States	21,086	26,279	31,957	122

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As a result of the very large production of turkeys, prices will be lower for the crop of 1939 than for the crop of 1938. However, the effect of the larger supplies on prices will be partly offset by the effect of larger consumer incomes. Another factor that has helped to support prices in recent years has been the rapidly increasing use of turkeys throughout the year.

Price per pound received by farmers for turkeys

Period	Oct.	Nov.	Dec.	Jan.
	Cents	Cents	Cents	Cents
Average 1928-37	17.9	18.9	18.5	18.1
1937-38	16.7	17.9	18.0	17.5
1938-39	16.5	17.1	18.4	18.3
1939-40	15.3			

Large increases in production, such as occurred this year, have invariably been followed by recessions in production. Such a recession is to be expected next year. The extent of the decrease will depend partly upon the outcome of the present marketing season and partly upon relative feed costs next year. Prices of turkeys will be lower this year than last but feed costs on the whole will probably not be greatly different. Feed costs next year are expected to be above those of this year.

Long-time Factors in the Turkey Outlook

The turkey crop of 1939 of about 31,957,000 birds is estimated to be almost double the size of the crop produced 10 years ago. The present crop is equal to about 1 bird for every 4 persons in the United States. This compares with about 1 bird for every 5 persons from the big crop of 1936 and with 1 bird for every 7 persons in 1929. No records exist to show with certainty the production per capita in earlier years. The U. S. Census of June 1, 1890, reported 10,754,000 turkeys on hand. Probably many poults were missed. The number thus reported would be about 1 bird for every 6 persons, but a complete enumeration would probably have shown a considerably larger per capita supply.

Between 1910 and 1930 the losses of poults from blackhead became so serious, especially in the more humid areas, that the expense of producing turkeys for market became prohibitive in many sections. Production was greatly reduced during this period in practically all the States east of the Mississippi River and in the first tier of States west of the Mississippi River where rainfall is also normally abundant. Gains were rapid in the Plains States lying farther west and having more limited rainfall. The far Western States increased production greatly. The total number of turkeys in the humid States and the tier west of the Mississippi River amounted to 73 percent of the United States total in 1910 but fell to 60 percent in 1920 and to 32 percent in 1929. The decrease during this period in the East was only partly balanced by the rapid increase in the West.

With the discovery in 1918 of the cause of blackhead and the development of successful methods for its control, the possibility of renewed successful production of turkeys in the Eastern States was demonstrated. But these improved methods came into use slowly and the number of turkeys continued to decrease in the United States until they reached the low point in 1927 of approximately 14,800,000 birds. This was equivalent to only about 1 turkey for every 8 persons.

Turkey production in large flocks had long been practiced in many parts of the West, because of the advantages large flocks possess in the matter of management and marketing, aside from the problems of disease control. In the humid Eastern States, where production in small farm flocks had been largely discontinued because of the extreme losses of poults, it was now found both possible and profitable to produce turkeys if they were grown in large flocks so they could be kept separate from other poultry and handled under improved methods of brooding, feeding, and sanitation. Such flocks have gradually grown in number and size in the North Central and Eastern States and are now extending into the South. The principal increase in turkey production during the last decade has come from these large flocks, numbering from a few hundred birds up to several thousand each.

Present numbers of turkeys as compared with 1929 are about 4 times as great in the North Atlantic and East North Central States and between 2 and 3 times as great in the West North Central and Pacific Coast States. Although numbers in most of the West North Central States are now from 2 to 5 times as great as in 1929 and in Iowa 16 times as great, numbers in North Dakota are the same as in 1929. Likewise, in the Rocky Mountain States, while Utah has 3 times as many and Colorado, Wyoming, and Arizona have small increases, the remaining States of this group have considerably fewer turkeys than in 1929. Increases in the South as a whole are relatively small, numbers in the South Atlantic States being only 1.6 times as many and in the South Central States 1.2 times as many as in 1929, with Texas up only 1 or 2 percent.

The proportion of the total crop produced east of the Mississippi River and in the first tier of humid States lying west of that river is now about 47 percent of the United States total compared with only 32 percent in 1929. While numbers of turkeys have been increasing, the number of small farm flocks has continued to decrease in most of that area, but this year there is a definite increase in the number of flocks of all sizes in practically all areas. This increase was particularly marked in the West North Central States where a similar, though less pronounced, increase in number of producers occurred last year also. In Texas and throughout most of the South, the small farm flock of turkeys, numbering less than 100 birds and often only a dozen or two and generally handled in conjunction with chickens, is still the prevailing type. Considerable numbers of turkeys are still produced in such flocks in a number of Northern and Western States, particularly in North Dakota.

Many general farmers who produce their own grain still raise a small flock of turkeys as a side line and will probably continue to do so. Most of these producers allow their turkeys to roam and forage for seed and insects. Many of them feed little or nothing from the bin and give the birds relatively little attention after the poults have passed the early period of severe losses. In sections where losses of poults under such conditions are particularly great, most of these small producers have been eliminated, but in other sections large numbers of such turkey farmers continue to operate. It may be expected that substantial numbers of turkeys will continue to come from this source both from the South and from favored sections of the Grain Belt in the North and West. Many of these producers, by adopting modern methods to the extent that these are suitable to their situation and operations, may be able to reduce their losses of poults substantially and thereby increase their production and their income.

In the competition between different sections in large-scale production, each has its relative advantages and handicaps. Broadly speaking, the most important of these are: on the one hand, cheap feed and relatively low operating costs and equipment, but with the handicap of

distant markets; and, on the other, higher costs for feed, equipment, and operation, but with nearby large markets and higher prices for local products. These differences may be less important in many cases than the element of personal management, but in the long run may result in definite shifts in future production between the different geographic areas.

The advantages of different types of birds continue to be a matter of debate. Demands for smaller birds for family use and larger birds for hotels and restaurants appear to provide outlets for different types.

The rapid recovery in numbers of turkeys during recent years and the great increase in the number of large flocks have been made possible partly through the development of large-scale hatchery production of turkey poults. Although exact percentages are not known, hatcheries now provide a large proportion of all poults raised. Hatchery poults offer several advantages to growers of turkeys, such as large numbers available for expansion of flocks, early poults, and uniform age and size. They provide at least the possibility of rapid improvement in the average type of bird raised. All of these are factors that facilitate successful marketing of the birds when raised.

Supplemental to the development of this branch of the hatchery industry has been the related development of large flocks of improved strains of egg-laying turkeys which not only lay more eggs but begin to lay much earlier This development has been particularly marked in California and to a lesser extent in Texas. In addition to the eggs from these important centers of supply, northern hatcheries have obtained considerable quantities of eggs from other southern and border States. At present there appears to be a strong movement in the North to produce locally more of its needed supply of turkey eggs. Many large flocks of breeding birds are being established there for that purpose.

In view of the rapid increase in turkey production during the last few years, it is difficult to determine what future production trends will be. An important factor in this problem, particularly as it applies to the restaurant demand, is the relative price of turkeys and other meats. The reduction in the cost of producing turkey meat, accomplished through improvement in type of bird and methods of growing and feeding, is placing turkeys more fully in competition with other meats and leading to greatly increased consumption of turkeys outside of the holiday season. The extent to which this trend continues will be an important factor affecting the future demand for turkeys.