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APPRAISAL OF THE FEDERAL FEED - GRAINS PROGRAMS

Agricultural Experiment Stations of
Illinois Nebraska
Indiana North Dakota
Iowa Ohio
Kansas South Dakota
Minnesota Wisconsin
Missouri cooperating

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AGRICULTURAL AND HOME ECONOMICS EXPERIMENT STATION
IOWA STATE UNIVERSITY of Science and Technology AMES, IOWA

FOREWORD

Research on problems in agricultural policy is important to provide guidelines for legislating and administering agricultural programs. The agricultural experiment stations in the land-grant colleges and universities are in a position to conduct such research. The agricultural experiment stations in the North Central Region of the United States joined in a regional research project entitled "Measuring and Appraising the Impact of Agricultural Price and Income Policy Upon Producers, Marketing Agencies, and Consumers." One of the studies conducted under this project is entitled "Effects of Corn Price and Income Policies Upon Producers, Marketing Agencies, and Consumers." This bulletin is the fourth in a series of regional publications from this study. Previous publications from the study are listed at the right. In addition, research results have been released in mimeograph reports, in articles, in current publications, in papers presented at meetings and the like.

Students of agricultural policy, both within and outside the colleges and universities and government, will find these publications of interest and value. Past programs are analyzed and alternative solutions to problems are suggested.

The manuscript for this bulletin was prepared by Professor Geoffrey S. Shepherd of Iowa State University who was chairman of a subcommittee in charge of the study. Other members of the subcommittee were Professor John Dunbar of Purdue University and Professor Vincent West of the University of Illinois. Members of the NCM-11 Committee representing their respective state agricultural experiment stations at the time the manuscript was approved were as follows:

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The following published and unpublished reports (listed in chronological order) were prepared under this project:

Published reports

1. Geoffrey Shepherd. Do we want . . . rigid or flexible corn loan rates? *Iowa Farm Science* 8: 397-399. Feb. 1954.
2. Geoffrey Shepherd and Allen Richards. Effects of the USDA corn storage program on corn carryover stocks and corn utilization. *Iowa Agr. and Home Econ. Exp. Sta. Res. Bul.* 446. (North Central Regional Publication No. 77). Jan. 1957.
3. Allen B. Richards. Factors affecting the quantity of corn placed under loan. Ninth Annual Symposium on Commodity Markets and the Public Interest, Chicago, Illinois. 1956 Proceedings: 9: 131-158. Sept. 1957.
4. Geoffrey Shepherd and Allen Richards. Effects of the federal programs for corn and other grains on corn prices, feed grains production and livestock production. *Iowa Agr. and Home Econ. Exp. Sta. Res. Bul.* 459. (North Central Regional Publication No. 89). Aug. 1958.
5. Allen Richards. Some economic considerations of the multiple use of forest land. *Land Econ.* 34: 263-268. Aug. 1958.
6. Geoffrey Shepherd. Is corn production leaving the Corn Belt? *Iowa Farm Science* 13: 60-62. Sept. 1958.
7. Geoffrey Shepherd and Kenneth Joslin. A different base for corn price supports? *Iowa Farm Science* 13: 75-76. Oct. 1958.
8. Geoffrey Shepherd and Allen Richards. Does the loan and storage program support corn prices? *Iowa Farm Science* 13: 97-98. Nov. 1958.
9. Geoffrey Shepherd, Allen Richards and John T. Wilkin. Some effects of federal grain storage programs on grain storage capacity, grain stocks and country elevator operations. *Ind. Agr. Exp. Sta. Res. Bul.* 697. (North Central Regional Publication No. 114). June 1960.
10. Geoffrey Shepherd, Francis Kutish, Don Kaldor, Richard Heifner and Arnold Paulsen. Storage and supports have worked, BUT *Iowa Farm Science* 14: 395-396. Dec. 1959.
11. Geoffrey Shepherd and Kurt Ullrich. Our corn-hog-cattle belt. *Iowa Farm Science* 14: 437-438. Feb. 1960.
12. Geoffrey Shepherd, Arnold Paulsen, Francis Kutish, Don Kaldor, Richard Heifner and Gene Futrell. Production, price and income estimates and projections for the feed-livestock economy under specified control and market-clearing conditions. *Iowa Agr. and Home Econ. Exp. Sta. Spec. Rpt.* 27. Aug. 1960.
13. Geoffrey S. Shepherd, Allen B. Richards and John T. Wilkin. The grain-storage picture. *Iowa Farm Science* 14: 519-520. June 1960.
14. Geoffrey Shepherd. Price supports and storage? No. 10 of a series: *The Farm Problem — What are the choices?* *Iowa Coop. Ext. Serv. Pm* 276J. Farm Foundation and the Center for Agricultural and Economic Adjustment, cooperating. 1960.
15. Geoffrey Shepherd. Land values increased, why not farm incomes? *Iowa Farm Science* 15: 720-722. June 1961.

Unpublished reports

1. Allen B. Richards. Impact of the USDA grain storage program on country elevators in Iowa. Unpublished Ph.D. thesis, Iowa State University Library, Ames, Iowa. 1957.
2. John T. Wilkin. Impact of the USDA support program on commercial grain storage. Unpublished M.S. thesis, Iowa State University Library, Ames, Iowa. 1958.

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SUMMARY

The original objective of the storage programs in 1933 was to operate them as price-stabilization programs to stabilize the prices of farm products against year-to-year variations in production.

In actual fact, however, the programs soon began to go further than this. After the first few years, the objective changed from merely stabilizing prices to "stabilizing them upward." Loan rates were set above the average-weather-crop levels, at certain percentages of parity prices. This raised the level of prices as well as stabilized them against variations in supply. This high level of prices stimulated production, reduced consumption and led to the accumulation of unsalable surpluses in storage.

On Feb. 28, 1961, the investment of the CCC in price-support programs amounted to \$9,193,721,000—made up of loans outstanding of \$2,141,507,000 (including \$946,376,813 of loans financed by lending agencies) and the cost of inventories, \$7,052,214,000.

The "realized cost" of "programs primarily for stabilization of farm prices and income" in fiscal 1960 was \$2,094,300,000. The total cost since the programs began in 1932 was \$19,847,400,000.

In the case of corn, in fiscal 1958, for example, about one-third of the cost went to the grain trade and transportation agencies to cover storage and handling charges.

The acreage-control programs of the 1930's had little effect on production. The programs after World War II had more effect, but since cross-compliance was not included, the effect was mostly to shift production from one crop to another.

The acreage restrictions and other features of the corn programs did not drive corn acreage and production out of the Corn Belt. From 1938 to 1959, corn acreage and production became more concentrated, not less concentrated, in the original 1938 commercial corn area. The same thing was true for oats. Cattle production just held its own. The production of hogs also became more concentrated in the Corn Belt.

The storage programs had some supporting effect on farm prices and incomes. Most of the gain in farm income, however, was only temporary. It was attained because quantities of feed grains and wheat were removed from the market and held in govern-

ment storage. Some of this grain was disposed of abroad under Public Law 480 and other subsidy programs. The major share, however, seems destined for the domestic market. When it is eventually released into domestic channels, it will depress prices and incomes about as much when it comes back on the market as it raised them when it was taken off. There will be no net gain so far as those quantities are concerned over the period as a whole. Most of the gain was borrowed from the future, and when the future arrives, it will have to be paid back.

Over the past 10 years, average farm income per person in the United States remained practically constant. In 1959, in fact, it declined a little—about 3 percent—from the 1947-49 average. Even with the income from nonfarm sources included, the rise in farm income per person was only 10 percent. Most of the benefits of the farm programs were capitalized into land values rather than increasing farm incomes.

The reason for this is that the low farm-income problem is the result not only of a continuous oversupply of farm products but also of a continuous oversupply of farmers. This oversupply results from the high birth rate on farms and the decline in the demand for farmers as farming becomes more mechanized. Only about one-sixth of the boys now growing up on farms will be able to find good jobs as farm operators. The other five-sixths will need to look for jobs in town. Surpluses of farmers depress income per farmer just as surpluses of farm products depress the prices of those products.

Two kinds of programs are needed, therefore, to solve the farm-income problem. One is a program to reduce the production of farm products. The other is a program to reduce the supply of farmers.

One way to reduce the supply of farmers is to facilitate the movement of excess farmers off farms and into better-paying urban jobs. This can be done by providing training for farm boys and girls for urban jobs as well as for farm jobs; then those who need to take jobs in town will be able to fill them.

These two programs need to be applied on a national scale. In addition, more intensive programs of a similar kind, but adapted to the special conditions in a number of depressed agricultural areas, need to be developed and applied in those areas.

Appraisal of the Federal Feed-Grains Programs

by Geoffrey Shepherd

In recent years, the agricultural price-support programs have stabilized feed-grains market supplies and prices to a considerable extent; but they have become more and more expensive and less and less effective in preventing price declines. And until 1961, the production-control programs were not able to reduce production in line with consumption; surpluses continued to grow.

The programs were initiated in 1929 under the Federal Farm Board. They failed to achieve their objective of stabilizing supplies and prices, primarily because of the severe industrial depression, and the Farm Board was terminated in 1933. A few months

later, the Commodity Credit Corporation was set up to do the job in a somewhat different fashion, using nonrecourse commodity loans to farmers and storage operations of its own on the commodities taken over.

The storage operations of the CCC were conducted on a comparatively small scale at first, at relatively low levels of loan rates. But in 1938, Congress began to prescribe loan rates at certain percentages of parity prices, considerably higher than market-price levels. This changed the nature of the programs from price stabilizing to price-level raising. The loan rates, the prices and the quantities of corn placed under loan each year are shown in fig. 1 and table 1. The loan

TABLE 1. Corn: U. S. loan rates, U. S. average farm prices, and differentials between them, support prices and quantity placed under support, 1933-56.

Year beginning October	Announced national average loan rate ^a		Average price Nov.-May ^b (\$/bu.)	Average price minus announced loan rate (\$/bu.)	Placed under price support			Percentage of production (%)	Under loan or owned by CCC at end of crop year (million bu.)
	(\$/bu.)	(%/parity)			Loans ^c (million bu.)	Purchase agreements (million bu.)	Total (million bu.)		
1933	0.45	60	0.45	0.00	268	---	268	11.2	82
1934	0.55	68	0.83	0.28	20	---	20	1.4	---
1935	0.45	55	0.55	0.10	31	---	31	1.3	---
1936	0.55	66	1.06	0.51	---	---	---	---	---
1937	0.50	58	0.51	0.01	61 ^d	---	61 ^d	2.3	45
1938	0.57	70	0.44	-0.13	230	---	230	9.0	258
1939	0.57	69	0.55	-0.02	302	---	302	11.7	471
1940	0.61	75	0.58	-0.03	103	---	103	4.2	403
1941	0.75	85	0.74	-0.01	111	---	111	4.2	197
1942	0.83	85	0.90	0.07	56	---	56	1.8	8
1943	0.90	85	1.12	0.22	8	---	8	0.3	6
1944	0.98	90	1.07	0.09	21	---	21	0.7	9
1945	1.01	90	1.15	0.14	3	---	3	0.1	---
1946	1.15	90	1.38	0.23	26	---	26	0.8	---
1947	1.37	90	2.20	0.83	1	---	1	---	---
1948	1.44	90	1.20	-0.24	377	174 ^e	551	15.3	493
1949	1.40	90	1.18	-0.22	332	55	387	11.9	650
1950	1.47	90	1.55	0.08	52	2	54	1.8	488
1951	1.57	90	1.66	0.09	25	1	26	0.9	306
1952	1.60	90	1.47	-0.13	309	107	417	12.7	580
1953	1.60	90	1.42	-0.18	369	102	471	14.7	736
1954	1.62	90	1.38	-0.24	200	59	259	8.5	870
1955	1.58	87	1.21	-0.37	356	65	421	13.0	1,060
1956 ^f	1.50	84	1.21	-0.29	401	76	477	13.8	1,295
1957 ^f	1.40	77	1.02	-0.38	320	49	369	10.8	1,355
1958 ^f	1.36	77	1.05	-0.31	343	38	381	10.0	1,400
1959	1.12	66	1.00	-0.12	439 ^h	38 ^h	512 ^h	11.7	---
1960 ^g	1.06	65	---	---	---	---	---	---	---

^a Applies to commercial area only in years when acreage allotments are in effect.
^b Average price received by farmers in period when most of the corn is placed under price support. In recent years, loans have been available from time of harvest through May.
^c Excludes purchase-agreement corn placed under loan in the following year during the period 1948 to date.
^d Includes 14 million bushels of 1937 corn placed under loan for first time in 1938 under short-term loan program.
^e Purchase agreements not available prior to 1947.
^f Loans were made to noncooperators at \$1.25 per bushel in 1956, \$1.10 in 1957 and \$1.06 in 1958.
^g Minimum support; may be increased at beginning of marketing year if higher support is required.
^h Preliminary. Based on CSS reports.
 Compiled from reports of Commodity Stabilization Service. Data published currently in: U. S. Dept. Agr., Agr. Mktg. Serv. The Feed Situation.
 Source of table: U. S. Dept. Agr. Agricultural outlook charts, 1956. Nov. 1955. Table 35, p. 68; U. S. Dept. Agr. Grain and feed statistics through 1954. U. S. Dept. Agr. Stat. Bul. 159. March 1955. Table 48, p. 46; U. S. Dept. Agr., Agr. Mktg. Serv. The Feed Situation. May 1959. p. 23.

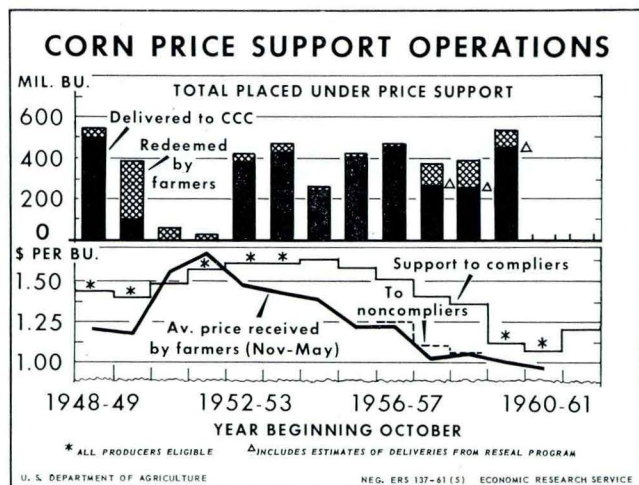


Fig. 1. Corn price support programs.

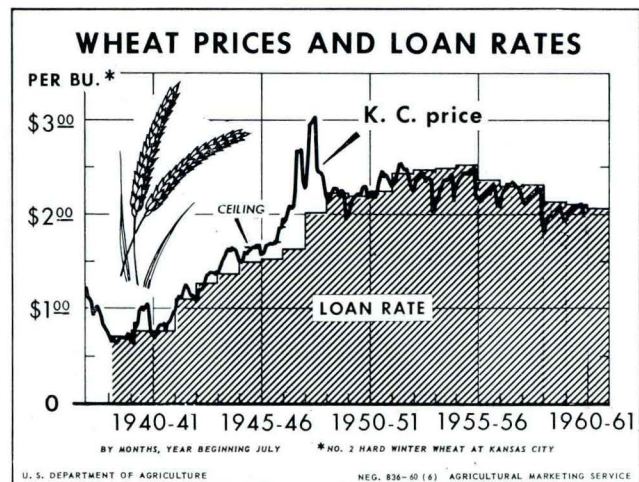


Fig. 2. Wheat prices and loan rates.

rates and prices for wheat are given in fig. 2 and table 2.

ORIGINAL OBJECTIVE OF THE STORAGE PROGRAMS

The original objective, stated in 1933, was to operate the programs as price-stabilizing programs—to stabilize the prices of farm products against year-to-year variations in production. This could have been accomplished by setting the loan rates for each crop at the level that would have permitted average-weather crops to move into consumption. The excess over average-weather crops would then have been removed from the market and put into storage to be released back to the market in short-crop years. This would have converted the irregular variations in production resulting from irregular variations in weather into a more nearly smooth flow of grain into consumption. This would have stabilized prices to a considerable extent against variations in supply.

TABLE 2. Wheat: Loan rate, price to growers, supply and distribution factors, quantity under support, delivered to CCC, stocks owned by CCC and loans outstanding, 1938-60.

Year beginning July	Gross loan rate (%)	Average actual price to growers ^a (\$)	Price above loan (\$)	Supply and distribution factors (mil. bu.)				
				Total domestic supply ^b	Domestic disappearance ^c	Net exports ^d	Year-end carryover	Under price support ^e
1938	0.59	0.56	-0.03	1,073	713	110	250	85.7
1939	0.63	0.69	0.06	991	662	49	280	167.7
1940	0.64	0.67	0.03	1,094	675	34	385	278.4
1941	0.98	0.94	-0.04	1,327	667	29	631	366.3
1942	1.14	1.09	-0.05	1,600	949	32	619	408.1
1943	1.23	1.35	0.12	1,463	1,237	-91 ^f	317	130.2
1944	1.35	1.41	0.06	1,377	992	106	279	180.4
1945	1.38	1.49	0.11	1,387	894	393	100	59.7
1946	1.49	1.90	0.41	1,252	766	402	84	22.0
1947	1.84	2.29	0.45	1,443	757	490	196	31.2
1948	2.00	1.98	-0.02	1,491	678	506	307	366.0
1949	1.95	1.88	-0.07	1,406	680	301	425	380.8
1950	1.99	2.00	0.01	1,444	686	358	400	196.9
1951	2.18	2.11	-0.07 ^g	1,388	684	448	256	212.9
1952	2.20	2.09	-0.11 ^g	1,562	656	300	606	459.9
1953	2.21	2.04	-0.17 ^g	1,779	630	215	934	557.2
1954	2.24	2.12	-0.12 ^g	1,917	607	274	1,036	430.7
1955	2.08	1.99	-0.09 ^g	1,971	598	340	1,033	320.6
1956	2.00	1.97	-0.03 ^g	2,038	583	546	909	253.5
1957	2.00	1.93	-0.07 ^g	1,860	583	396	881	256.3
1958	1.82	1.75	-0.07 ^g	2,343	625	439	1,279	609.5
1959	1.81	1.76	-0.05 ^g	2,407	617	507	1,283	317.5
1960h	1.77	---	---	(2,554)	(620)	(497)	(1,437)	---

CCC stocks and loans outstanding at year-end (June 30)

	Delivered to CCC ⁱ (mil. bu.)	Stocks owned by CCC ^j (mil. bu.)	Under loan		Total (mil. bu.)
			Crop previous July ^k (mil. bu.)	Crops of earlier years (mil. bu.)	
1938	15.7	6.6	21.5	---	28.1
1939	7.7	1.6	10.3	---	11.9
1940	173.7	169.2	31.4	7.2	207.8
1941	269.8	319.7	98.1	1.4	419.2
1942	184.0	259.8	133.3	4.9	398.0
1943	0.3	99.1	15.5	2.5	117.1
1944	72.9	103.7	20.1	1.9	125.7
1945	0.2	---	32.5	---	32.5
1946	---	---	0.7	---	0.7
1947	---	---	0.8	---	0.8
1948	290.9	227.2	16.3	---	243.5
1949	247.5	327.7	28.5	5.0	361.2
1950	41.9	196.4	8.9	2.3	207.6
1951	91.3	143.3	11.6	---	154.9
1952	397.7	470.0	22.5	---	492.5
1953	486.1	774.6	71.4	3.9	849.9
1954	391.6	975.9	11.3	2.8	990.0
1955	276.7	950.7	27.6	1.3	979.6
1956	147.2	823.9	9.5	3.3	836.7
1957	186.9	834.9	14.8	3.4	853.1
1958h	486.1	1,146.6	52.2 ^k	9.9	1,208.7
1959h	161.41	---	---	---	---

^a United States marketing-year prices are the result of (1) weighting state monthly prices by monthly sales to obtain state marketing-year averages and (2) weighting the state marketing-year averages by total sales for each state. Includes an allowance for unredeemed loans at average loan values beginning 1938.

^b Beginning carryover plus production.

^c Total supply minus net exports minus year-end carryover.

^d Includes shipments to United States territories of about 4 million bushels annually.

^e Includes under purchase agreements, beginning 1948.

^f Exports totaled 45 million bushels, and imports used to supplement domestic animal feed supplies totaled 136 million bushels.

^g Growers assumed storage charges which averaged 7 to 10 cents per bushel, depending on the time it was put under loan.

^h Preliminary.

ⁱ Includes purchase-agreement wheat delivered to CCC.

^j Includes open-market purchases, if any, beginning 1943 and, accordingly, may include some new-crop wheat.

^k For example, 52.2 million bushels are 1958-crop wheat under loan on June 30, 1959; 9.9 million bushels were under loan from earlier crops. Any 1959 crop is not included.

^l Through May 31, 1960.

Source of table: U. S. Dept. Agr., Agr. Mktg. Serv. The Wheat Situation. June 1960. p. 4.

THE PRICE-STABILIZATION PROGRAMS WERE MISUSED AS PRICE-RAISING PROGRAMS

In actual fact, however, the programs soon began to go further than this. After the first few years, the objective changed from merely stabilizing prices to "stabilizing them upward." Loan rates were set above average-weather-crop levels, at certain percentages of parity prices. This raised the level of prices as well as stabilizing them against variations in supply. This high level of prices stimulated production, reduced consumption and led to the accumulation of unsalable surpluses in storage.

During the first 20 years of the programs, this type of operation, as it reached a critical stage, was twice bailed out by wars—World War II and the Korean conflict—which increased the demand so much each time that the surpluses quickly vanished. These events in effect permitted the programs to stabilize prices to some extent against war-induced variations in demand as well as in supply. The programs were not planned for this purpose; variations in demand are too unpredictable and too lengthy to be handled effectively by planned storage operations. But by accident, the programs did provide some degree of stabilization against variations in demand as well as in supply.

After 1952, however, as a result of rapid technological advance and several years of good weather, the accumulation of surpluses was resumed on an unprecedentedly large scale, against the will of the administrators and with no unexpected increases in demand in sight to rescue the programs. The size of the stocks in recent years is shown in fig. 3. Most of these stocks were owned by the CCC.

In an attempt to stay this accumulation of storage stocks, the loan rates were reduced to lower and lower percentages of parity, as the data in tables 1 and 2 show. The loan rate for corn, for example, dropped from 90 percent of parity, where the rate had stood from 1944 to 1954, to 65 percent in 1960.

But percentages of parity are not appropriate bases for price supports. They take into account only changes in prices, ignoring changes in quantities of product sold and quantities of goods and services purchased; thus they ignore the revolutionary technological improvements in agricultural production practices which drastically reduced costs with the passing years.¹

In 1958, corn producers were offered a choice between (a) the existing program of high supports and restricted acreage and (b) lower supports (the average of the open-market prices for corn over the preceding 3 years, or 65 percent of parity, whichever was the higher) and no acreage restrictions. They voted for the latter. Corn acreage harvested jumped from 73.5 million in 1958 to 84.4 million in 1959, and production rose from 3.8 billion bushels to 4.4 billion bushels. But the restriction to "not less than 65 percent of parity" and the lag resulting from the inclusion of the supporting effects of the program on

1 For a more complete discussion of parity prices, see: Wayne Fuller, Glen Purnell, Lonnie Fielder, Marvin Laursen, Ray Beneke and Geoffrey Shepherd. An alternative parity formula for agriculture. Iowa Agr. and Home Econ. Exp. Sta. Res. Bul. 476. 1960.

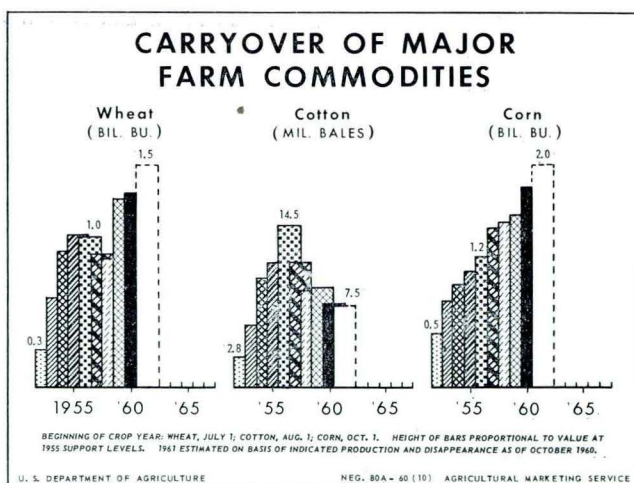


Fig. 3. Carryover of major farm commodities.

prices during the 3-year average periods left loan rates still above long-run open-market equilibrium levels. Surpluses continued to accumulate.

The stocks were much larger than needed for price stabilization purposes. A Senate Document in 1952,² after citing "the worst corn production deficits of 850 to 950 million bushels" that took place in 1934 and 1936, went on to say:

Yields of other feed grains tend to fluctuate in the same direction as do yields of corn, so that the variation in total feed-grain production is about 20 to 25 percent larger (in tons or equivalent bushels of corn) than in production of corn alone. To cover this additional source of variation (and that in corn yields as well) would have required a total carryover of 900 million to 1 billion bushels of corn plus the equivalent of another 100 million bushels in the form of reserves of other grains in excess of working stocks.

But this estimate does not pay much attention to the costs of storing the stocks. Karl Fox, then with the USDA, concluded that, when the costs of storage are taken into account, a typical corn carryover during a period of normal yields should be 600 to 700 million bushels.³ He added that the CCC should not take action to reduce the corn carryover below about 500 million bushels, or feel alarmed if corn stocks rose to 800 million bushels as a result of better-than-average weather. Shepherd and Richards arrived at a round figure of 1 billion bushels of corn equivalent for total feed grains.⁴ This includes an allowance of 100 million bushels for feed grains other than corn. This figure, therefore, is about 100 million bushels higher than Fox's upper limit of corn carryover of 800 million bushels.

More recently, R. L. Gustafson, in his Rule 1 based on maximizing net gain, recommends only about 200

2 Reserve levels for storable farm products. 82nd Cong., 2nd sess. Sen. Doc. 130. 1952.

3 Long range farm program. House Committee Print, 1954, p. 39.

4 Geoffrey Shepherd and Allen Richards. Effects of the USDA corn storage program on corn carryover stocks and corn utilization. Iowa Agr. Exp. Sta. Res. Bul. 446. (North Central Regional Publication No. 77.) 1957. p. 985.

TABLE 3. Realized Cost of Agricultural and Related Programs, by Function or Purpose, Fiscal Years 1932-1960^a

(This statement reflects the realized cost of agricultural and related programs. It differs from tables on realized cost prepared in years prior to 1958 in order to give effect to adjustments reflecting recommendations of Congressional Committees, changes in legislation, and further review of the nature and purposes of the various programs. The costs shown are determined as follows: (1) For activities financed from appropriated funds, the expenditures less receipts arising from the activities so financed; (2) for noncorporate loan funds, the losses on loans and the net interest cost or income; (3) for Commodity Credit Corporation and

(Millions of Dollars)

	Total	1932-39	1940	1941	1942	1943	1944	1945
<i>Programs Primarily for Stabilization of Farm Prices and Income:</i>								
CCC nonrecourse loan, purchase, and payment programs ^b -----	4,937.6	19.0	7.4	34.0	69.1*	49.9*	5.9*	29.4
CCC supply, commodity export, and other activities-----	507.2	--	--	--	0.1*	2.0	12.4*	5.8
CCC interest, administrative and other general costs-----	2,028.9	13.2	8.7	2.2	9.6*	12.1	10.4	26.1
National Wool Act Program-----	233.4	--	--	--	--	--	--	--
International Wheat Agreement ^c -----	1,096.2	--	--	--	--	--	--	--
Donations of commodities to other nations — excess of inventory cost over market value ^d -----	244.0	--	--	--	--	--	--	--
Commodities sold for foreign currencies under Title I, P.L. 480 ^e -----	2,417.0	--	--	--	--	--	--	--
Removal of surplus agricultural commodities ^f -----	2,510.4	314.2	143.9	226.1	196.3	112.0	63.4	24.9
Sugar Act-----	437.4*	33.7	25.2*	30.0*	33.0*	0.8*	22.5*	33.1*
Soil Bank — acreage reserve program-----	1,662.3	--	--	--	--	--	--	--
Acreage allotment payments under the Agricultural Conservation Program-----	2,354.8	881.7	380.2	326.7	332.5	218.1	193.1	--
Other, including Agricultural Adjustment Act of 1933, parity payments, and other adjustment and surplus removal programs ^g -----	2,293.0	1,034.0	223.8	195.7	202.1	203.7	156.9	6.1*
Total-----	19,847.4	2,228.4	738.8	754.7	619.1	497.2	383.0	47.0

* Excess of credits—deduct.

^a This table on realized costs of agricultural and related programs reflects, essentially, the cost to the taxpayer, over a period of time, of all the programs of the Department of Agriculture. The present table is a revision which adds one more year to the similar table prepared last year, with adjustments to reflect recommendations of the House Committee on Agriculture, Senate Committee on Agriculture and Forestry, changes in legislation, and further review of the nature and purposes of the various programs.

"Realized cost" means the net cost actually incurred to date. It was adopted as the basis for the statement since (1) it is a realistic measure of the actual financial results of program operations within a specified time, and (2) it is a common denominator which can be applied to all programs regardless of how they are financed. For example, the advancing of a loan to a borrower under one of the Department's lending programs is not considered a cost. It is regarded as an investment which will be repaid. However, the interest paid by the Government on funds provided for lending purposes is considered a realized cost of the year in which it accrues. Similarly, interest collected from the borrower is included as income, or a reduction of cost. The principal amount of a loan becomes a cost only in the event the borrower defaults and the loan is written off by the Department. This example is illustrative of how the realized cost approach comprises elements of cost as distinguished from cash outlays, and how it also takes into account income and program

credits. The realized cost basis can be applied to all programs since, regardless of how funds are made available for carrying out a program, there is in each instance a measurable net cost of operations to date. Many of the Department's programs are financed directly from appropriations, some activities are carried out by Corporations using their corporate funds, and others are operated from revolving funds. Funds available, therefore, is not a practicable common denominator for all programs; it likewise does not take into account income or offsetting receipts arising from operations. Realized cost does not include any element of anticipated gains or losses and, accordingly, is not synonymous with "accrued cost" or "accrued income and expense."

The statement is designed to present, in an objective and factual way, the realized costs of agricultural programs for the information of those interested in agriculture or in governmental operations generally. It was prepared by the Department to meet the need for a single table which would cover in a consistent fashion all of the agricultural programs.

^b Includes the loss on CCC donations representing the excess of inventory cost over market value of commodities donated. The market value of such donations is included below in the categories designated "School Lunch and Donations" and "Other, including Wartime, Defense, and Special Needs." (*Ed. note:* These footnotes were taken verbatim from USDA data. The categories referred to here, however, are in a section of the table not reproduced in this bulletin.)

million bushels corn equivalent working stocks when total feed supplies are about average.⁵ The recommended quantity when total supplies are large varies with the size of the total supplies.

The stocks of corn, therefore, were nearly twice as large as needed for stabilization purposes. The corresponding stocks of wheat were more than twice as large as needed.⁶

COST OF THE STORAGE PROGRAMS

The costs of the CCC storage programs rose to high levels. On Feb. 28, 1961, the CCC said in a news release that "investment of the CCC in price-support programs amounted to \$9,193,721,000—made up of loans outstanding of \$2,141,507,000 (including \$946,376,813 of loans financed by lending agencies), and the cost value of inventories, \$7,052,214,000." The composition of this investment by commodities on Jan. 1, 1960, is shown in fig. 4.

⁵ R. L. Gustafson. Carryover levels for grains. U. S. Dept. Agr. Tech. Bul. 1178. p. 19. See also: R. L. Gustafson. Implications of recent research on optimal storage rules. Jour. Farm Econ. 40:290-300. May 1958. The rules are given on pp. 294-295.
⁶ Sen. Doc. 130, *op. cit.*

The "realized cost" of "programs primarily for stabilization of farm prices and income" in fiscal

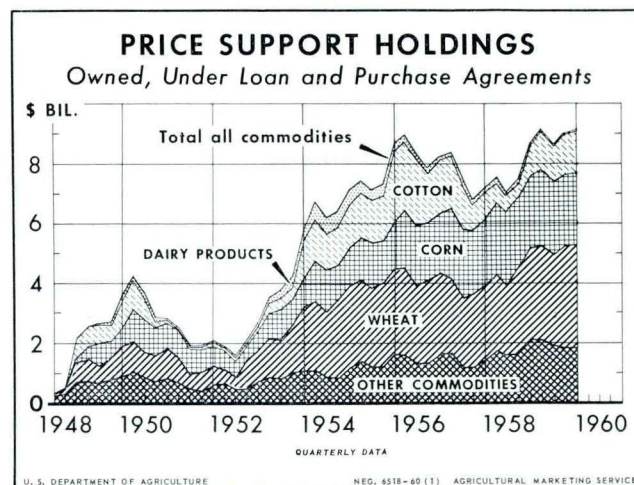


Fig. 4. Price support holdings of farm commodities owned, under loan and purchase agreements.

TABLE 3 (continued)

Federal Crop Insurance Corporation corporate funds, the net gains or losses from operations and the interest cost to Treasury on Government-subscribed capital; and (4) for corporations of the Farm Credit System, the interest cost to Treasury on Government-subscribed capital and payments made by Treasury on account of reductions in interest rates on mortgages less dividends and franchise taxes paid to Treasury. Interest cost to Treasury on noncorporate loan funds and on Government-subscribed capital of corporations has been computed on the basis of the average rate incurred by Treasury on the public debt in each of these years.)

1946	1947	1948	1949	1950	1951	1952	1953	1954	1955	1956	1957	1958	1959	1960
30.1*	71.9	125.4	254.7	230.6	235.4	58.6	58.6	372.1	422.6	566.6	874.8	690.0	528.2	513.3
35.9*	242.7*	38.4*	4.7*	2.7*	1.6	1.3	1.6*	24.7	49.5	70.0	149.1	97.1	132.8	311.8
33.2	13.9	6.5*	15.9	48.1	42.0	34.6	55.3	102.7	81.7	195.2	311.7	364.9	195.0	478.1
--	--	--	--	--	--	--	--	--	0.2	2.0	61.3	57.2	20.0	92.7
--	--	--	--	75.6	180.4	171.3	130.8	59.0	99.7	92.3	90.1	82.4	48.3	66.3
--	--	--	--	--	--	--	--	24.1	37.8	39.5	39.0	43.1	30.7	29.8
--	--	--	--	--	--	--	--	--	129.5	304.9	497.2	666.2	318.1	501.1
19.2	78.4	51.2	75.6	96.6	46.0	37.5	82.3	177.6	58.9	179.1	171.1	125.5	140.9	89.7
5.4*	7.8*	13.1*	23.9*	14.7*	14.9*	21.8*	20.5*	11.9*	13.0*	22.3*	23.4*	21.3*	24.1*	21.0*
--	--	--	--	--	--	--	--	--	--	3.6	514.7	535.3	608.7	--
22.5	--	--	--	--	--	--	--	--	--	--	--	--	--	--
1.5*	2.2*	--	10.8	24.9	18.8	7.1	7.6	36.7	35.1	30.3	28.7	24.8	29.3	32.5
2.0	88.5*	118.6	328.4	458.4	509.3	288.6	312.5	785.0	902.0	1,461.2	2,714.3	2,665.2	2,027.9	2,094.3

c The expenditures under this program are for payment of the difference between the price specified in the International Wheat Agreement and the domestic price of wheat.

d The market value of such donations is included below in the category designated "School Lunch and Donations." (Ed note: These footnotes were taken verbatim from the USDA data. The category referred to here, however, is in a section of the table not reproduced in this bulletin.)

e Represents the net realized cost of commodities shipped to foreign countries in accordance with the provisions of the Agricultural Trade Development and Assistance Act (P.L. 480, 83rd Congress, as amended). The total cost for fiscal year 1959 was \$1,113,254,336, representing (1) the excess of the investment in CCC-owned commodities shipped over the export sales value, \$150,862,853; (2) the cost of financing exportation, \$938,208,823 (primarily cost of commodities shipped from private stocks and ocean transportation); and (3) interest of \$24,182,660. The total cost is reduced by a credit of \$795,148,196 for foreign currencies collected under this program in fiscal 1959, resulting in a net realized cost of \$318,106,140. The credit consists of the U.S. dollar proceeds (\$83,326,274) from sales of foreign currencies at rates of exchange current at a time of sales of such currencies, and the U.S. dollar equivalent of (1) foreign currencies used for the purposes authorized by Section 104 of the Act (\$465,332,722), valued at the rate specified in the agreement for loan and grant disbursements and for other disbursements, at the rate at which the transfer from Treasury was

made; and (2) foreign currency balances on hand June 30, 1959 (\$1,327,589,930), valued at the Treasury selling rate at that date, less foreign currency balances on hand at June 30, 1958 (\$1,081,100,730), valued at the Treasury selling rate as of June 30, 1958.

f Excludes cash payments to schools for part of their school lunch program expenditures during fiscal years 1943 to 1949, inclusive.

g Includes (1) Acreage allotments and marketing quotas program; (2) Parity payments; (3) Agricultural Adjustment Act of 1933 and related Acts; (4) Agricultural Marketing Act Revolving Fund, and payments to stabilization corporations for losses incurred; and (5) Miscellaneous, including four miscellaneous programs as follows: (a) net operating results of the Federal Surplus Commodities Corporation which operated from 1935 to 1942 for the purpose of purchasing, processing, storing, handling, transporting, and disposing of surplus agricultural commodities and products for relief; (b) retirement of cotton pool participation trust certificates; (c) removal of surplus cattle and dairy products; and (d) transfer of hay and pasture seeds to Federal land administering agencies. The amount of \$1,034.0 million shown for the period 1932 to 1939 represents \$378.6 million for costs of programs conducted by the Federal Farm Board in the years 1932 to 1934, and \$655.4 million for costs of the Agricultural Adjustment Act of 1933 and related Acts.

Source: Taken verbatim from USDA data.

1959 was \$2,027,900,000.⁷ The total cost since the programs began in 1932 was \$19,847,400,000. The breakdowns for 1960 and earlier years are given in table 3.

Only a part of these expenditures went directly to farmers. The rest went to other groups, such as storage fees to storage agencies, and indirectly to construction companies for the building of additional storage space. These other agencies received a substantial part of the income transferred from taxpayers. In fiscal 1958, for example, the "realized cost" of the corn program was \$271 million. Of this amount, \$110 million—about one-third—went to the grain trade and transportation agencies to cover storage and handling charges. None of this went to farmers. The program thus has been a "grain-trade program" as well as a farm program. It has aided segments of the grain trade as well as farmers.

This is one of the reasons why the grain trade,

⁷ The "realized cost" is large in recent years partly because it includes the cost of acquiring the large inventory built up in those years. If crops were very small in 1960 and later years and prices rose enough to pull substantial quantities out of storage for sale on the market, the revenue from those sales would offset a large part of the total costs in those years, and "realized cost" would be relatively small.

originally bitterly opposed to "government interference" in the grain business, became reconciled to it as the years went by. A survey, taken in 1957, of Iowa county grain dealers' attitudes toward the federal grain-storage program revealed that most of the dealers expressed satisfaction with the program.⁸

THE PROGRAMS TEMPORARILY RETARDED BUT DID NOT PREVENT A DECLINE IN AGRICULTURAL PRICES

Figure 5 indicates that, in spite of the large scale and high cost of the storage programs, the programs were not able to keep prices received by farmers from declining both in absolute terms and relative to prices paid by farmers. The parity ratio declined after the Korean conflict in 1951, until in March 1961 it stood at only 80.

There is some statistical evidence that the storage programs had a temporary supporting effect on agricultural prices and incomes. These prices and incomes

⁸ Geoffrey S. Shepherd, Allen B. Richards and John T. Wilkin. Some effects of federal grain storage programs on grain storage capacity, grain stocks and country elevator operations, Ind. Agr. Exp. Sta. Res. Bul. 697. (North Central Regional Publication No. 114.) June 1960.

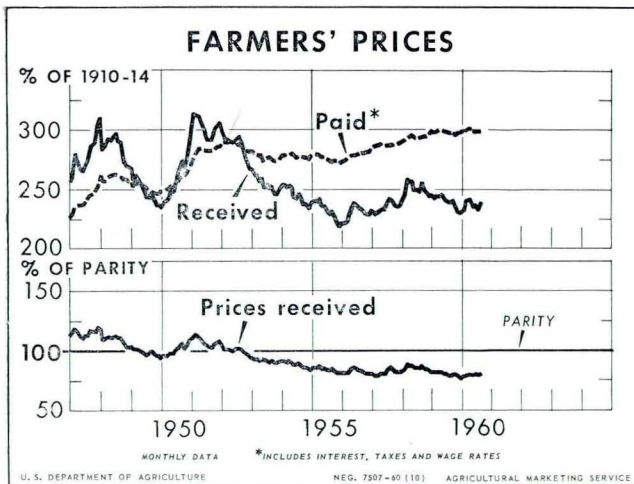


Fig. 5. Farmers' prices decline from 1958.

did not rise, but the evidence indicates that without the programs, prices and incomes would have fallen farther than they did.

Two different studies, using different analytical techniques,⁹ reached the same conclusion — that during the period from 1952 to the present, the programs raised the prices of feed grains and wheat, and probably cotton, to some extent above the levels which they otherwise would have reached. This effect on prices is shown in table 4. Column 3 shows the estimates of prices if all the feed grains that went into storage after 1952 had instead been fed to livestock. Column 4 shows the estimates if the increase in the stocks of wheat had been fed, too.

This raising of prices increased the incomes of feed-grains and wheat producers as a group, since the increase in prices was greater in percentage terms than the reduction in production that resulted from acreage restrictions. The effects of the acreage re-

⁹ Geoffrey Shepherd and Allen Richards. Effects of the federal programs for corn and other grains on corn prices, feed grains production and livestock production. Iowa Agr. and Home Econ. Exp. Sta. Res. Bul. 459, Aug. 1958; Geoffrey Shepherd, Arnold Paulsen, Francis Kutish, Don Kaldor, Richard Heifner and Gene Futrell. Production, price and income estimates and projections for the feed-livestock economy under specified control and market-clearing conditions. Iowa Agr. and Home Econ. Exp. Sta. Spec. Rpt. 27, Aug. 1960.

TABLE 4. United States average farm price of basic livestock products, actual, and estimated with higher levels of feed consumption, 1952-58.

Product	Actual average prices	Estimated average prices with increased grain consumption	
		Of 6.3 percent	Of 10.3 percent
Beef cattle, average price received by farmers (\$/cwt.)	18.03	17.15	16.59
Hogs, average price received by farmers (\$/cwt.)	18.23	14.77	12.58
Sheep, average price received by farmers (\$/cwt.)	6.78	6.55	6.40
Farm chickens (c/lb.)	17.57	15.22	13.72
Eggs per dozen (c/doz.)	39.7	34.58	31.24
Milk eligible for fluid market (\$/cwt.)	4.73	4.64	4.56
Corn (\$/bu.) at a 1:13 ratio to hog prices	1.32	1.13	0.97

strictions on production before 1958 may have been offset, or more than offset, by the effects of the higher and more certain prices.

The raising of the prices of feed grains and wheat also increased the prices and gross income of livestock and livestock producers, since the high prices of feed grains and wheat restricted livestock production. This restriction of livestock production increased income, because the demand for most livestock and livestock products is inelastic. The effect of the programs on total United States net farm income for 1952-59 is indicated by the estimate that the income would have been 34 percent lower than it actually was if the programs had not been in effect.

Most of the gain in farm income resulting from the corn and other feed-grains programs, however, was only temporary. It was attained because quantities of feed grains and wheat were removed from the market and held in government storage. Some of this grain was disposed of abroad under Public Law 480 and other subsidy programs. The major share, however, seems destined for the domestic market. When it is eventually released into domestic channels, it will depress prices and incomes about as much when it comes back on the market as it raised them when it was taken off the market. There will be no net gain so far as those quantities are concerned over the period as a whole. Most of the gain was borrowed from the future and will have to be paid back when the future arrives.

REASONS WHY PRICES DECLINED

The basic reason why the storage programs were unable to keep agricultural prices from declining was that the technological agricultural revolution during and after World War II caused production to increase faster than the demand increased. Figure 6 shows that agricultural production increased 27 percent from 1950 to 1960, while population increased only 19 percent.

“During the past 5 years, the annual net additions to stocks of major crops have amounted to the equiva-

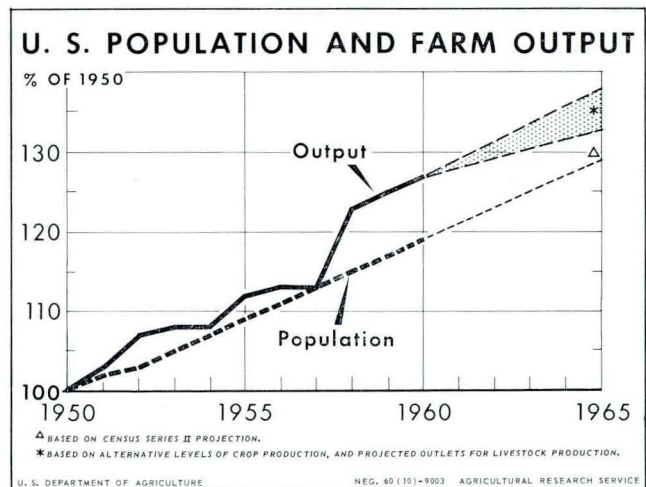


Fig. 6. United States population and farm output.

lent of a little more than 5 percent of the harvested cropland."¹⁰ During the period 1955-57, "about 7 percent of total farm marketings were diverted from the operation of the normal marketing system by price support and surplus disposal operations."¹¹

The increase in production was the basic cause of the decline in prices after 1951. It is obvious that a storage program alone could not solve this kind of problem. It could have only a temporary effect at best.

If there had been no price-support programs, the basic oversupply situation would have shown up as a low-price problem. Instead, the price-support programs caused it to show up chiefly as a surplus-stocks problem, partly by encouraging further increases in production through the removal of price uncertainty and guarantee of prices above long-run open market levels, and partly by reducing consumption by livestock.

PRODUCTION CONTROLS INEFFECTIVE

The production-control programs were unable to check this pressure for production to expand.

The reasons for this are clear: The production controls were focused on only one of the three factors of production — land. No attempt was made to restrict labor or capital. There is enough substitutability among the factors of production in agriculture so that reductions in one were more or less completely offset by increases in the others.

Several different analysts came to the same conclusion — that except for tobacco, the acreage-control programs of the 1930's had very little effect on production.¹² The programs after World War II had more effect, but since cross-compliance was not included, the effect was mostly a shift of production from one crop to another.

The 1954 and 1955 corn-acreage programs, for example, apparently had very little effect on total acreage in crops. They also had very little effect on corn acreage; but they did affect total feed-grain production by increasing the production of other feed crops.

Table 5 shows that the total United States acreage of corn decreased only 1 percent from 1953 to 1955. The small size of the decrease in corn acreage was chiefly due to the lack of compliance by many corn farmers. Only 42 percent of the Iowa farmers interviewed in a USDA study complied with corn allotments.¹³ Most of the corn farmers interviewed who

TABLE 5. Changes in production, harvested acreage and yields for various crops in the United States between 1953 and 1955.

Crop	Harvested acreage (percent)	Total production (percent)	Yield per acre (percent)
Wheat	-30	-20	+15
Cotton	-31	-11	+28
Corn	-1	no change	+1
Rice (1954-55)	-28	-17	+16
Oats	+4	+30	+25
Barley	+66	+61	-3
Grain sorghum	+105	+113	+4
Soybeans for beans	+26	+38	+9
Flaxseed	+10	+11	+1
Rye	+49	+61	+8
All tame hay	+3	+7	+3

Source: U. S. Dept. Agr., Agr. Res. Serv. Effects of acreage allotment programs. U.S. Dept. Agr. Prod. Res. Rpt. 3. June 1956. p. 6.

did not comply with corn allotments intended to feed their corn and, therefore, were not interested in complying for eligibility in the price-support program. Reductions in corn acres made by those who complied with the program were just about offset by increases in corn acres made by farmers who did not comply.

Table 5 also shows that the corn program had little or no effect on corn production. But the programs for wheat and cotton had substantial effects on total feed-grains production.

Compliance with the wheat and cotton programs was high. All wheat farmers interviewed by the USDA in North Dakota and Washington complied with the allotments. All but 4 percent of the wheat farmers interviewed in Kansas and 14 percent interviewed in Montana complied. Most of the acres diverted from wheat, cotton and corn went into feed-grain production. Iowa corn farmers who complied with corn allotments grew more soybeans and oats. Wheat acres were reduced by 30 percent (see table 5). These acres were mainly diverted to grain sorghum in Kansas and to barley in other major wheat-producing regions. The acres which were taken out of cotton production were shifted mainly to the production of soybeans, corn, grain sorghum and barley. The diversions of acres from allotment crops to feed grains other than corn resulted in a 10-percent increase in the total production of feed grains. This increase in feed-grains production was not necessarily a net addition to the total quantity of grain fed because some of the wheat would have been fed anyway. But the increase had some depressing effect on feed-grain prices.

Thus, the wheat and cotton producers transferred a substantial part of their surplus problem to the producers of the nonbasic crops, chiefly the feed grains other than corn, for which price supports were provided without restrictions on production.

"The expansion in production of feed grains and the lower prices of these grains tended to encourage an expansion in production of grain-consuming livestock. However, much of the 6-percent increase in this type of livestock that occurred between 1953 and 1955 probably would have occurred without the allotment programs."¹⁴

¹⁰ Sherman Johnson and Kenneth Bachman. Recent changes in resource use and in farm incomes. *In*, Center for Agr. and Econ. Adjustment, Problems and policies of American agriculture. Iowa State University Press, Ames, Iowa, 1959. p. 11.

¹¹ 86th Cong., 2nd sess. Sen. Doc. 77, 1960, p. 20.

¹² T. W. Schultz and O. H. Brownlee. Effects of crop acreage control features of AAA on feed production in 11 midwest states. Iowa Agr. Exp. Sta. Res. Bul. 298. April 1942. See also: T. W. Schultz. Agriculture in an unstable economy. McGraw-Hill, New York, 1945. p. 172; and G. Shepherd. Agricultural price policy. Iowa State University Press, Ames, Iowa, 1947. pp. 61-64.

¹³ U.S. Dept. Agr., Agr. Res. Serv. Effects of acreage allotment programs. U.S. Dept. Agr. Prod. Res. Rpt. 3. June 1956. See also: North Central Farm Management Research Committee. Farmers reaction to acreage allotments. Ky. Agr. Exp. Sta. Dec. 1955.

¹⁴ U.S. Dept. Agr. Prod. Res. Rpt. 3, op. cit., p. 6.

COST OF THE ACREAGE-CONTROL PROGRAMS

The cost of the acreage-control program is included as one of the items in table 3. It was \$608,700,000 in 1959.

The data for earlier years and the total for all years are also given in table 3. These data show the shift from the category "acreage allotments" after 1947 to the "soil bank" in later years.

THE PROGRAMS TEMPORARILY SUPPORTED PER-CAPITA NET FARM INCOMES BUT DID NOT INCREASE THEM

Not only were the programs unable to keep agricultural prices from declining; more important, they were unable to increase net per-capita farm income.

Table 6 and fig. 7 show that average farm income per person has remained practically constant over the past 10 years in the United States. In 1959, in fact, it declined a little — about 3 percent — from the 1947-49 average. Even with the incomes from nonfarm sources included, the rise in farm income per person was only 10 percent.

These average per-capita income data are affected by the fact that they are based on "farms" as defined by the census. Thirty percent of these "farms" produce only 2 percent of the total farm products

TABLE 6. Per-capita income of farm and nonfarm population, United States, 1950-59.

Year	Average net income per capita of			
	Farm population			Nonfarm population
	Agricultural sources	Non-agricultural sources	All sources	All sources
1950	\$626	\$212	\$838	\$1,585
1951	751	232	983	1,763
1952	711	251	962	1,849
1953	666	265	931	1,902
1954	654	262	916	1,852
1955	602	281	883	1,979
1956	597	300	897	2,074
1957	627	306	933	2,121
1958	740	299	1,039	2,082
1959	644	321	965	2,216

Source: U.S. Dept. Agr., Agr. Mktg. Serv. The Farm Income Situation. July 1960, p. 38.

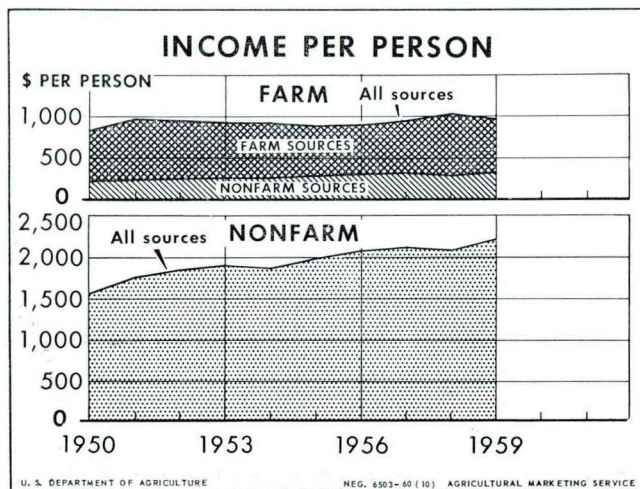


Fig. 7. Farm and nonfarm income per person.

sold; they really are not farms at all, but only country residences for urban people. But the situation is much the same if these farms are excluded and only the commercial farms are included — those farms with gross sales of \$2,500 or more and which produced 91 percent of the total farm products marketed in 1959. The average net income from farming of these commercial farms was \$5,200 in 1949-51, but only \$4,200 in 1959. If income from nonfarm sources is included, the figures are about \$6,000 in 1949-51 (when nonfarm family income was \$5,300) and \$5,800 in 1959 (when nonfarm income had risen to about \$7,600).

These farm-income figures include the return on the farmers' own capital invested in their machinery, buildings and land. Data compiled by the Agricultural Research Service, USDA, for commercial owner-operated farms in the 32 chief types-of-farming areas in the United States, show that in all but two of the 32 types, a substantial decline took place from 1947-49 to 1959 in the net return to operator and family labor and management after deduction of a charge for the owner-operator's capital. The same sort of thing is shown in a study by Ruttan and Stout of Purdue University; they estimate that the share of gross farm income going to labor and management on farms declined from about 44 percent in 1947-49 to about 24 percent in 1957.¹⁵

Table 7 and fig. 8, however, show that in the same period, the value of farmland and buildings per acre, which is based chiefly on the return to land, rose 68 percent.

Why did net farm income per person remain practically constant while the value of farmland per acre rose 68 percent? If nonfarm per-capita incomes also had remained about constant, it would indicate that some general factor had held down all incomes. But table 6 and fig. 7 show that per-capita nonfarm income rose 47 percent.

Why Did Land Values Rise?

Land values are determined by many factors — the desire for protection against inflation, for prestige, for security, etc. — but the chief factor usually is the return that the buyer expects to get from the land.

These returns have been affected by the application of new technology and the operation of the price-support, acreage-allotment and Soil Bank programs.

1. The effects of the application of new technology depend on the elasticities of supply and demand and the changes that take place in the location of the supply and demand curves.

The elasticity of the demand for food in the United States is estimated at about -0.2. The improvements in technology moved the supply curve to the right. Under these conditions, gross returns to agriculture would decline.

Gross returns to the individual farm firm, however, would not necessarily decline. If, in the extreme case, only one farmer adopted the new technology, the

15 V. W. Ruttan and T. T. Stout. Regional differences in factor shares in American agriculture, 1925-57. Jour. Farm Econ. 42:52-68. Feb. 1960.

TABLE 7. Value of farm real estate per acre, United States, 1947-59^a (1947-49=100).

Year	Index numbers	Year	Index numbers
1947	94	1955	133
1948	101	1956	138
1949	105	1957	147
1950	103	1958	156
1951	119	1959	168
1952	132		
1953	132		
1954	128		

^a Farmland and buildings as of March 1.

Source: U. S. Dept. Agr. Agricultural Outlook Charts, 1960, p. 55.

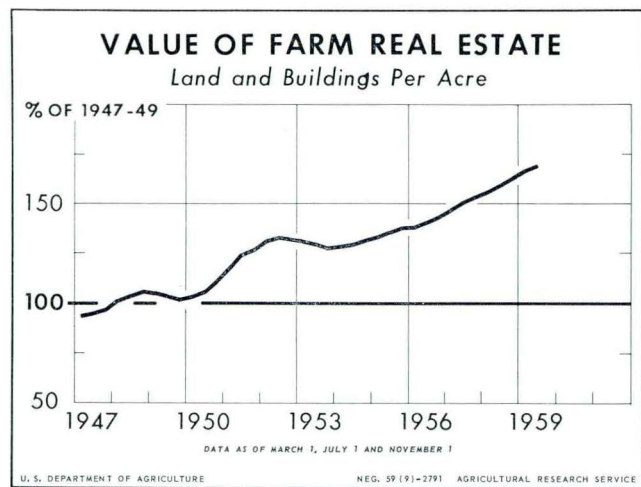


Fig. 8. Value of farm real estate up sharply during 1950's.

effect on total production would be negligible and so would the effect on prices. The demand for any one farmer's product is virtually infinitely elastic. So the gross returns to his farm firm would increase *pari passu* with the increase in its production.

The net returns would increase also, because the marginal cost of the new technology would have been less than the marginal returns; otherwise the new technology would not have been adopted in the first place.

The marginal cost of the new technology in some cases would be close to zero (as in the case of hybrid seed corn, which costs only a very small percentage of the marginal return it brings) or negative (as in the case of such things as diesel tractors where the reduction in total fuel cost is greater than the higher initial and upkeep costs, otherwise the diesel tractor would not be purchased). In all these cases, net returns would increase more than gross returns if only one farmer adopted the new technology.

Obviously, of course, this is only the limiting case at one end of the range of realistic possibilities. The limiting case at the other end of the range is the situation in which all farmers adopt the new technology simultaneously.

This second extreme is used in many discussions of farm policy. It is about as unrealistic as the other extreme, for a great many farmers are limited in their ability to adopt new technology by the topography of their farms, the extent of their education and managerial ability and so on.

The actual situation lies somewhere between the two extremes.

Farmers who "get thar fustest with the mostest" with new technology, therefore, face a demand curve which has an elasticity somewhere between infinity and -0.2. The net returns to those with an elasticity in excess of -1.0 could increase, while those below -0.2 would decrease unless their costs declined more rapidly than their gross returns, which is unlikely.

With the passage of a few years of time, the number of farmers can decline, as in fact it did during the 1950's. This decline in the number of farmers would tend to increase net income per farm, even if total net income for agriculture as a whole were declining. It is difficult, however, to measure these things empirically.

2. The effects of some of the farm programs on net income per farm have been estimated empirically.

Acreage allotments rationed the right to plant acres to certain crops, and the value of these allotments was capitalized into land values. One study estimated that in Pittsylvania County, Virginia, an acre of tobacco allotment accounted for \$962 of the selling price of a farm in 1954 and \$1,673 of the selling price in 1957.¹⁶ The value of an acre of cropland without the allotment was \$22.75. The average sale price of the 203 farms in the sample was \$10,242, and an estimated \$5,650 (55 percent of the total value) was paid for the right to grow tobacco on a specified number of the purchased acres. For the \$5,650, the purchaser received nothing tangible, but only a franchise to grow tobacco. Similar evidence was found in Greene, Wilson and Pitt counties, North Carolina.

A study of land values in Kansas yielded similar information on the value of wheat allotments. According to a limited study in two areas in Kansas, the right to grow wheat added substantial value to wheat land. The value added was not of the order of magnitude indicated for tobacco land but was a substantial percentage of the total value per acre.

3. The development of new technology after World War II began to make it profitable for farmers to handle larger farms than before. The pressure to enlarge their farms may have led some farmers to pay more for an extra 40 or 80 acres than they could for a whole farm; in technical terms, the marginal return for additional acres was higher than the average return for the farm as a whole. In the year ending in March 1960, 45 percent of all sales of farms or tracts of land were for adding to existing farms. The figure in 1950 was only 21 percent.¹⁷

4. After World War II, the prices of farm products were high. But farmers could remember the drastic price decline that took place soon after World War I. At first, farmers were not sure that price supports

¹⁶ F. H. Maier, J. L. Hedrick and W. L. Gibson. The sale value of flu-cured tobacco allotments. Va. Agr. Exp. Sta. Tech. Bul. 148. April 1960. p. 27. — referred to in a paper: The economic role of land resource institutions in agricultural adjustment by Walter E. Chryst and John F. Timmons, ARS, USDA, and Iowa State University, respectively, May 1960, p. 13.

¹⁷ The price of land bought for farm enlargement early in 1960 was higher than the price of all land sold in 5 regions, lower in 5 others and the same in another region, out of a total of 11 regions surveyed. (Current developments in the farm real estate market. ARS, USDA. Oct. 1960. p. 9).

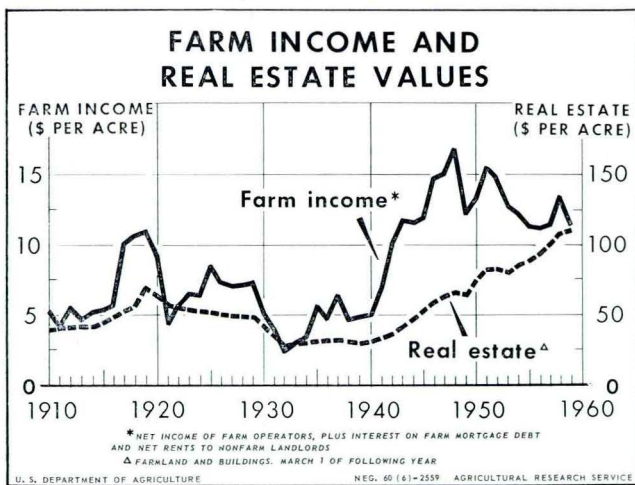


Fig. 9. Values of farm income and real estate in dollars per acre.

would be continued at levels above long-run equilibrium levels. Figure 9 illustrates the way in which land prices rose much less, and much slower, than farm incomes.¹⁸ But after the Korean conflict, farmers began to feel more certain that supports would be continued. This feeling of confidence persisted until the index of land prices reached about the same levels as the index of farm income.

5. Finally, a part of the rise in land values during the 1950's may be attributed to fear of inflation. During 1960, this fear eased to some extent, and this may have been partly responsible for the slight decline in land values that took place in 1960.

Why Did Per-Capita Farm Incomes Not Rise?

There are two chief reasons why per-capita net farm income changed so little during the 1950's.

1. *Continued overproduction* of farm products relative to the demand for them kept gross national farm income low.

This overproduction didn't result from any increase in acreage. Crop acreage has remained unchanged at about 350 million acres since 1920, and the decline in the demand for feed for horses and mules had pretty well run its course by 1950. The overproduction resulted mainly from rapid technological advances and the addition and substitution of capital resources — machinery, fertilizer, agricultural chemicals, etc. These were both added to and substituted for labor and land and permitted yields per acre to increase and one man to handle more acres.

Production expenses changed also. The use of more efficient production techniques had a tendency to lower some costs, but the greater use of commercial inputs (i.e., fertilizer) and inflation tended to raise costs. The net effect was to decrease net national farm income. A corresponding decline in the number

¹⁸ "We would suspect . . . that the benefits of these programs have had their greatest impact in improving agricultural welfare in those periods in which the uncertainty existing about their continuity was sufficient to preclude them from being capitalized into land values." (Chryst and Timmons, *op. cit.*, p. 19).

of farmers held per-capita net farm income about constant.

The average yield of feed grains, for example, rose more than 33 percent from 1947-49 to 1957. Total farm output increased 21 percent, while population increased only 19 percent.

The price of farm products declined, but individual farmers continued to adopt new technology and to expand the size of their operations in an effort to increase their incomes. Total production increased under the impact of new technology and further depressed farm prices. A small increase in supply causes a large decrease in prices for farm products and almost as large a decrease in gross farm income.

Consumer income per person also increased. Some of this increase was merely inflationary. But relatively little of the real increase in consumer incomes went for food. Total food consumption tends to rise only as population increases — food consumption per person remaining remarkably steady. With United States consumer incomes now at relatively high levels, further increases in income add to the demand for some farm products but decrease the demand for others. This doesn't have much effect on total food consumption.

Continued overproduction in relation to demand, then, is the first reason that farm incomes didn't rise during the 1950's. This kept national gross farm income low.

2. *Another kind of imbalance* is the second reason that per-capita farm incomes didn't rise. We can call this imbalance an excessive supply of farmers in terms of the number that could earn incomes comparable to those for similar ability in other occupations. Along with the overproduction of farm products, this kept income *per farmer* low.

The large supply of farm operators relative to the demand for them resulted from two things: (1) the high farm birth rate and the difficulties which impede movement off farms, thus keeping the supply of farmers excessive, and (2) the decline in the number of farms as they became larger and fewer, thus reducing the demand for farm operators.

The farm population declined along with the decline in the number of farms (from a peak of 32 million persons in 1933 to 21 million in 1959), but it did not decline fast enough to permit per-capita farm incomes to rise during the 1950's. This relative oversupply of farmers meant dividing up the total agricultural income pie into relatively small pieces and bidding up the rent and price of land. This kept net income per farmer low. An oversupply of farmers depresses farm incomes per farmer just as surplus farm products depress farm-product prices per bushel, bale, etc., of product.

The farm birth rate alone is high enough to result in a continuous increase in the number of farmers if all boys born on farms stay in farming. Farm births exceed farm deaths by about 400,000 per year. In 1950, the number of farm children was 68 percent higher than the number needed to maintain a stationary farm population.

But we don't need even a stationary farm population. The demand for farmers is declining, and

farming practices have become much more labor-saving. Greater mechanization and machinery size have increased the size of farm that a family can handle. The average size of farm in the United States increased from 175 acres in 1940 to 217 acres in 1950 and to 245 acres in 1954. The number of commercial farms dropped 21 percent from 1947-49 to 1955-57.

EFFECTS OF THE PROGRAMS ON THE LOCATION OF FEED-GRAINS PRODUCTION

There was some concern up to 1959 that corn-acreage controls and the denying of loans to noncompliers might be driving some corn production out of the Corn Belt. Some thought, too, that the substitution of corn for controlled crops, such as cotton and wheat, was increasing corn production outside of the Corn Belt — that is, outside of the original “commercial corn area.”

Figure 10 shows that the commercial corn area¹⁹ did increase in size— more than 60 percent from 1938 to 1958. Apparently, however, this was merely a result of more counties coming under the definition of a commercial corn county as corn yields per acre rose. The annual county and state production data show that corn production was not “driven out of the Corn Belt.” Even corn acreage was not driven out.

The annual corn acreage and production data by counties show that corn acreage and production became more concentrated, not less concentrated, in the original 1938 commercial corn area. Figure 11, which illustrates changes in corn acreage, and fig. 12, which illustrates changes in corn production, show that the same thing is true of Iowa, Illinois, Indiana

¹⁹ The “commercial corn area” includes the counties where average corn production during the preceding 10 years was 450 or more bushels per farm and 4 or more bushels per acre of farmland in the county.

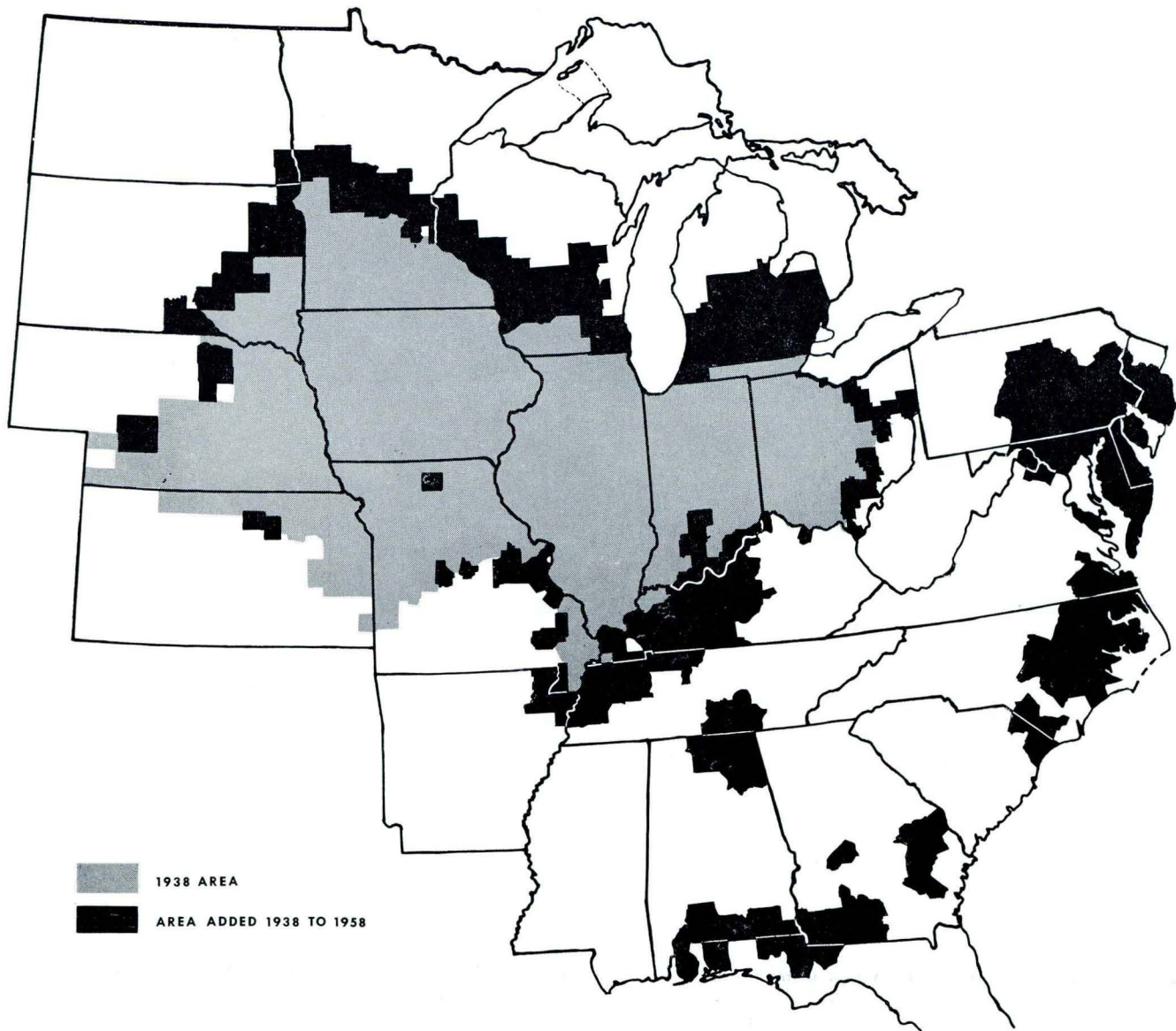


Fig. 10. Original 1938 commercial corn area and counties added since 1938.

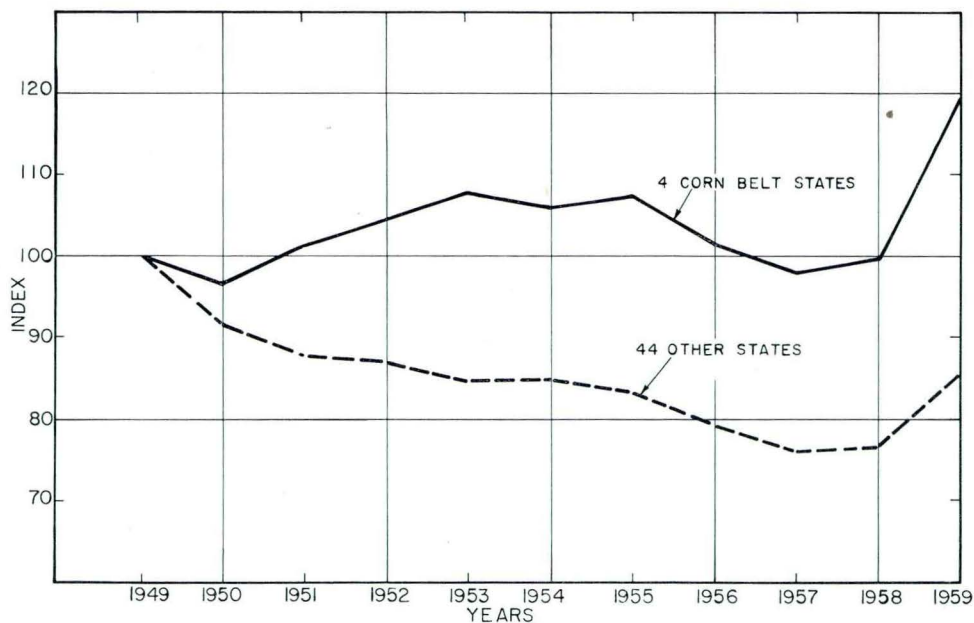


Fig. 11. Changes in corn acreage, 1949-59.

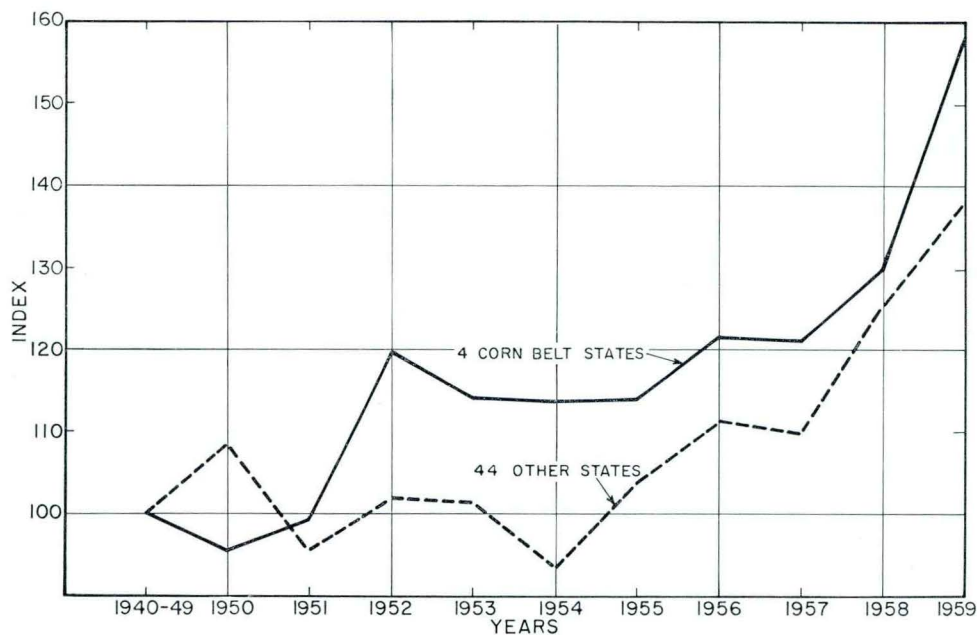


Fig. 12. Changes in corn production, 1949-59.

and Ohio, the four states in the heart of the Corn Belt.²⁰ The figures indicate that this tendency increased even more after 1958 when corn acreage restrictions were removed and new corn rates, which were lower but were available to all producers, went into effect.²¹ The same thing is true for oats.

Production of hogs also became more concentrated in the Corn Belt, as seen in fig. 13. Cattle production just held its own (fig. 14).

²⁰ The same result is obtained when Minnesota is substituted for Ohio as one of the four Corn Belt states.

²¹ Geoffrey Shepherd and Allan Richards. Effects of the federal programs for corn and other grains on corn prices, feed grains production and livestock production. Iowa Agr. and Home Econ. Exp. Sta. Res. Bul. 459. Aug. 1958. pp. 282-285; and

EFFECTS OF THE PROGRAMS ON LIVESTOCK PRODUCTION AND PRICES

The corn storage program was originally set up in the belief that stabilizing the flow of corn into consumption also would stabilize livestock production and prices.

This stabilizing effect should be most pronounced for hogs, since the bulk of the hogs in the United States is raised on corn-producing farms and since corn constitutes about 80 percent of their feed.

There is some evidence that the corn program has had a considerable stabilizing effect on corn prices

Footnote 21 (continued)

Geoffrey Shepherd and Kurt Ullrich. Our corn-hog-cattle belt. Iowa Farm Science. 14:437-438. Ames, Iowa. Feb. 1960.

Fig. 13. Changes in hog production.

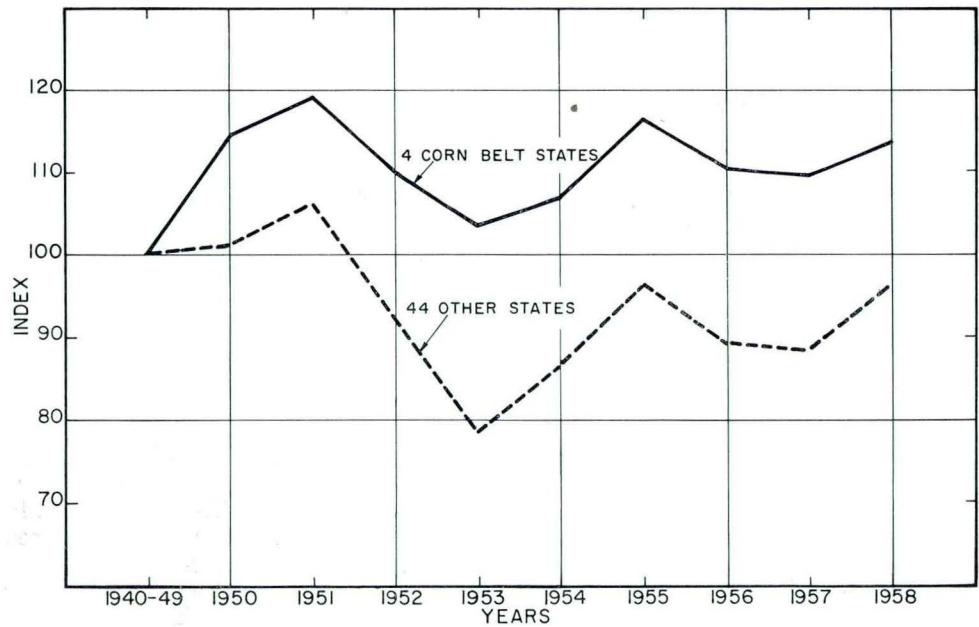
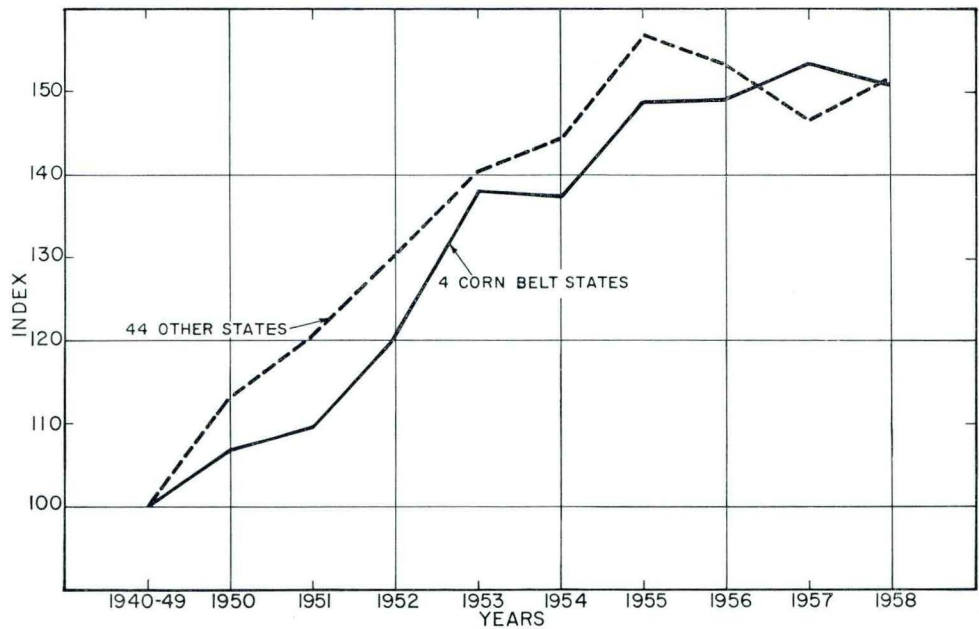


Fig. 14. Changes in cattle production.



and consumption.²² “. . . despite its shortcomings, the corn program has provided a degree of stabilization to the supply of feed.”²³ But it does not appear to have had a stabilizing effect on hog production and prices.

Figure 15 shows annual pork production since 1900. The chart shows clearly that the variation in pork production increased substantially after 1933 when the corn program began. On the face of it, this could be regarded as evidence that the corn program

unstabilized pork production rather than stabilized it.

Study of fig. 15, however, suggests that the increase in the variation in pork production after 1933 resulted chiefly from two unique events, both unrelated to the corn program. The sharp decline in pork production during the 1930's came immediately after the severe drouths of 1934 and 1936; the great peak in 1942 and 1943 came as a result of the war effort to produce the maximum amount of meat by full utilization of the large crops produced in those years plus most of the large supplies of corn carried over from the immediate prewar years. This indicates that variations in corn supplies have a controlling influence on pork production.

Yet, fig. 16 shows that hog production continued to

22 Geoffrey Shepherd and Allen Richards. Effects of the federal programs for corn and other grains on corn prices, feed grains production and livestock production. Iowa Agr. and Home Econ. Exp. Sta. Res. Bul. 459. pp. 272-276, 285-289. Aug. 1958.

23 H. F. Breimyer. Emerging phenomenon: A cycle in hogs. Jour. Farm Econ. 41:760-68. Nov. 1959.

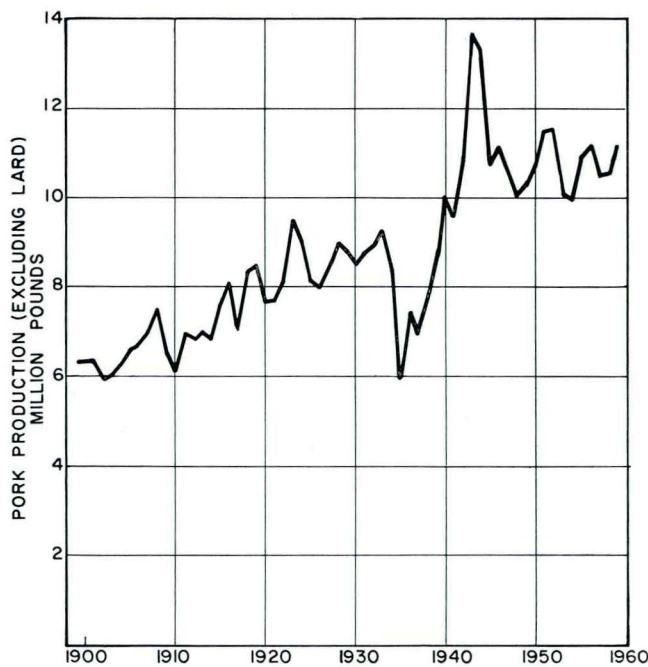


Fig. 15. Changes in pork production (excluding lard).

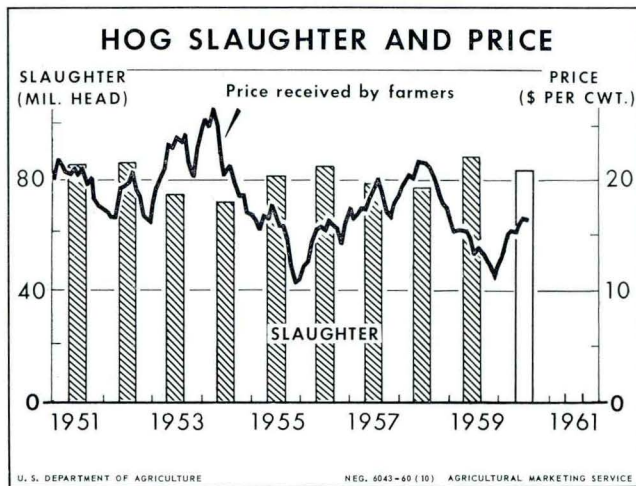


Fig. 16. Changes in hog slaughter and prices received by farmers.

vary after World War II, when the CCC "stabilization" stocks of corn and other feed grains grew to large proportions, and this could be expected to stabilize hog production. The variation in hog production after World War II is fully as great as it was before the war and the drouths of the 1930's.

The variation in hog prices is also great. Figure 16 shows that hog prices since the war have varied cyclically, inversely with hog slaughter. They appear to be about as variable as they were before the drouths of 1934 and 1936 and World War II. Breimyer believes that the stabilization of feed supplies attained under the corn program has had some indirect *unstabilizing* effects on hog production.

"Current circumstances alter drastically the old tie between production of corn and of hogs.

They assign an entirely new role to hog and corn price relationships. No longer must virtually all corn go into production of livestock. No longer must hog production adjust so quickly to the corn supply. Variations in the hog-corn ratio now more often arise from changes in the price of hogs and less often from changes in the price of corn. The ratio now has more direct effect on hog production than before — on its own, and not merely as a reflection of the size of the corn supply. As such it plays a more active role in regulating hog production; and yet it is less effective than it appeared to be when only a go-between."²⁴

According to Breimyer's view, the hog-corn price ratio has become a less effective regulator of hog production because hog production now responds less to variations in corn production (the impact of which is reduced by the corn storage program) and more to hog prices. And hog prices tend to induce cyclic variations in hog production, because of the inherent time-lag in the response of production to prices. Hog production, therefore, is becoming more cyclic in character. This cyclic variability in the price of hogs is replacing to a considerable extent the earlier irregular variability that resulted from irregular variations in corn supplies.

In addition, there is some evidence that the elasticity of the demand for hogs is less now than it was before World War II. The USDA and others estimated the elasticity before the war at about -0.6. The estimates for the period since the war range from -0.33 to -0.39.²⁵ This decrease in the elasticity of the demand for hogs has increased the size of the hog price variation that results from a given variation in hog production. The hog industry is more internally unstable than before.

This raises the question of whether a feed-grain stabilization program alone can stabilize hog production and prices. It can stabilize hog production against irregular variation resulting from irregular variations in corn and other feed-grains production, but apparently it cannot stabilize hog production against internally created, self-perpetuating cyclic variations which result from cyclic variations in hog prices. That requires measures which deal directly with hog prices.

One of the most likely measures would be direct payments to hog producers, with the "support" price level (below which payments would be made) set a little lower than the long-run average market price level. This would smooth out returns from hogs, in effect smoothing out hog prices and thus stabilizing hog production.²⁶

Statements are frequently made that government price-support programs in agriculture are useless. Critics point that, in the case of corn, surpluses are overwhelming and corn prices still are low, but in the livestock industry, where no programs are in

²⁴ *Ibid.*, p. 764.

²⁵ Letters from Earl E. Miller, SHR Branch, AMS, USDA, July 22 and 29, 1958, and research conducted by Wilbur Maki, Dept. Econ. and Soc., Iowa State University, Ames, Iowa.

²⁶ Geoffrey Shepherd, Don Kaldor and Francis Kutish. Let's think about hog supplies and prices! Iowa Farm Science, 13:255-258. June 1959.

effect, there are no surpluses and prices are more nearly satisfactory.

The evidence given in this kind of statement is invalid. The chief reason why livestock prices are reasonably good is that supplies are reasonably well adjusted to market demand; and the chief reason for that is that the corn and other feeds programs have held a substantial percentage of the feed supply off the market. If these supplies had been fed to livestock instead, livestock production would have been substantially greater, and livestock prices would have been substantially lower. This subject is discussed in greater detail in a later section.

RELATIONSHIP OF WHEAT AND FEED-GRAINS PROGRAMS²⁷

Feed grains and wheat are inseparable public policy problems for the decade ahead, as in those past. These crops are the major production alternatives on most of the crop land in the United States. Events of 1953-55 help to remind us of this. While wheat plantings declined by 21 million acres from 1953 to 1955 in response to the national wheat allotment and marketing quota program (the situation by regions is shown in fig. 17), oat plantings rose by 4 million acres, and barley and sorghum for grain rose by nearly 7 million acres each.

These shifts occurred in most areas of the United States. In four Northern Plains states, a decline of 6 million acres of wheat and 1 million acres of corn from 1953 to 1955 was offset by an increase of 5 million acres in three other feed grains. In eight Mountain states, 3 million fewer acres of wheat were countered by 2 million acres more of feed grains. In three Pacific states, the exchange was about equal — 1.4 million acres.

Even in five states in the heart of the Corn Belt, wheat harvested fell by nearly 2 million acres from

²⁷ This section on wheat was prepared by John A. Schnittker of Kansas State University. A detailed discussion of wheat programs is found in his: *Wheat problems and programs in the United States*, Mo. Agr. Exp. Sta. Res. Bul. 753. (North Central Regional Publication No. 118.) Sept. 1960.

1953 to 1955, while corn acreage remained constant and other feed-grains acreage rose by 1.3 million.

As wheat regions turned to feed grains, a small increase took place in the Corn Belt share of total wheat planted. This occurred partly because growers with fewer than 15 acres of wheat were exempted from compliance with acreage allotments. Most growers using this exemption were in the Corn Belt and Northeast. In the late 1950's, more than half a million wheat growers planted over 4 million acres and produced about 100 million bushels each year on exempted acreage.

The shift of feed-grain acreage to wheat was very modest, however, compared with the change from wheat to feed grains in the Great Plains and Northwest. Many farmers with wheat allotments did not use them, even though their neighbors were moving into wheat production under the exemption described. In 1959, for example, 514,000 farms with 4.3 million acres wheat allotment, and located chiefly in the eastern half of the United States, planted no wheat. This helped offset shifts to wheat by others.

As the 1960's begin, wheat is clearly the most visible and possibly the most pressing farm policy problem. The USDA estimates that wheat stocks by mid-1961 will be 1.5 billion bushels. Most of this will be Hard Red Winter Wheat, as shown in fig. 18. Under the existing program, an average of 100-200 million bushels should be expected to be added to stocks each year. A program which simply reduced wheat marketings to the sum of domestic food, exports, seed and the usual amount of wheat fed, would add 5 to 10 million tons of grain to an overburdened feed-grain market. Under present law, the result would probably be an increase in the growth of feed-grain stocks by about the amount of the decrease in the growth of wheat stocks.

A farm program which terminated wheat acreage allotments and priced all grains as feed without substantially reducing total resource use through land retirement or other means would also transfer excess wheat-producing capacity either to feed grains or leave it producing for government, as at present. It would matter little whether or not wheat growers who

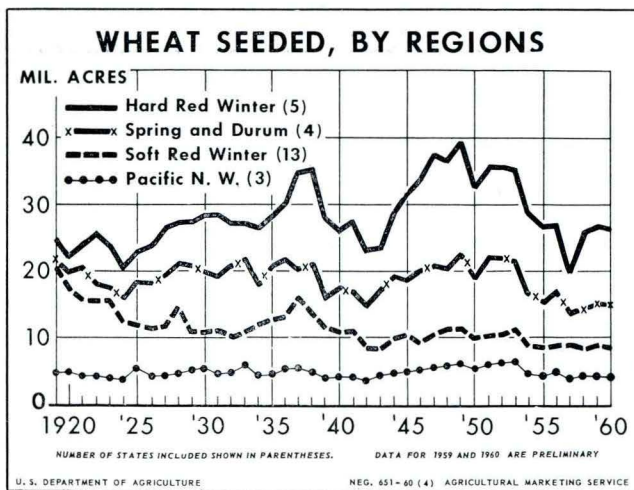


Fig. 17. Acreage of wheat seeded by regions in the United States.

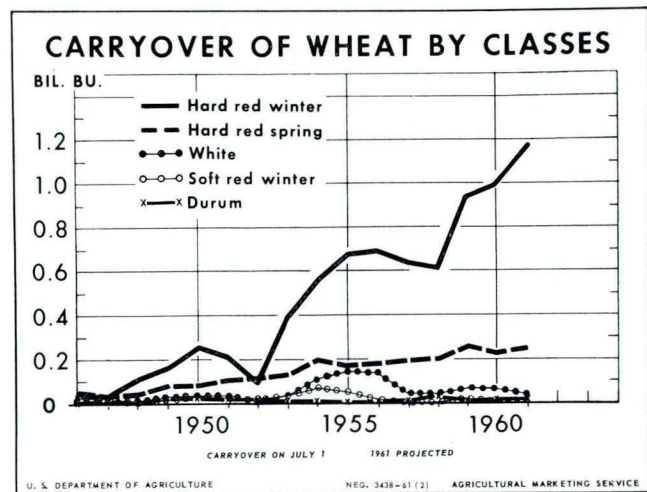


Fig. 18. Carryover of wheat by classes.

shifted to sorghums and barley in 1954 returned to former production patterns. Potentially, all grain produced would be feed grain.

If farm prices are to be maintained near 1960 levels in subsequent years, and if commodity stocks are to be reduced, a reduction in total farm-resource use appears necessary. It would be a significant improvement over present law if wheat marketings were effectively reduced to a little less than total disappearance and if resources now devoted to production of excess wheat for stocks were turned to some conservation use at the same time.

This need not be of positive direct benefit to feed-grain or wheat producers, but it would benefit taxpayers. After 6 years of improving one commodity situation at the expense of another, it would be a welcome innovation.

The most pressing need with respect to wheat is to reduce the carryover to not more than half the present level. To do this, acquisitions of new wheat by the CCC must be ended. Only a program of effective control over production or marketings of wheat can establish real control over wheat stocks, and thus over budget expenditures by the federal government in the next few years. There is nothing to indicate that wheat production would decline if the wheat price were to be cut by as much as one-third from 1960, and there is every reason to believe it would increase.

Whatever the price level for wheat and farm products from 1961 to 1965, administrative controls hold the only real hope for successful reductions in wheat carryover by 1965. Once that is achieved, discussion of a new wheat program for the long run can begin.

EFFECTS OF THE FEED-GRAINS PROGRAMS ON THE DAIRY INDUSTRY²⁸

It is difficult indeed to state with precision what the impact of the feed-grain programs has been on such aggregate statistics as number of dairy farms, level of milk production and milk prices, cost of dairy feeds and other important national dairy statistics. There are several important reasons for this.

The dairy industry is very widely dispersed and subject to a wide variety of influences, even though heavy production occurs along the northern edge of the Corn Belt and in the New England and Mid-Atlantic states. The alternative employment opportunities for dairy farm resources differ so widely from region to region that changes in these alternatives often obscure the impacts of changing feed supplies and prices. The heavy investment in specialized facilities and livestock and the regularity of dairy income tend to reduce the response rate of dairy farmers to forces originating in the rest of agriculture and even in the nonfarm economy. In truth, the dairy industry is among the most stable in agriculture.

Efforts at isolating and quantifying the economic relations on the supply side of the dairy industry on a national basis have met with very limited success,

largely for the reasons just stated. In spite of several studies designed to quantify the impact on milk production of such factors as milk, beef and hog prices and feed supplies, further reflection suggests the essential futility of deriving very meaningful and useful conclusions from such national aggregative data. If this is true, it would be superfluous to attempt to appraise aggregative results of the feed-grain programs.

A more promising approach, although much less fully explored, lies in the analysis of program effects on certain local areas or typical farms (by some definition).

Outside of the Corn Belt, a considerable proportion of the dairy farms are deficit with respect to concentrates but amply supplied with roughages. Feed concentrates are imported in considerable volume into the northeastern states, for example. To the extent that the feed-grain program has maintained and raised feed-grain prices, this program may have had a depressing effect on the dairy industry in these areas. It should be noted, however, that substantial increases in freight rates in the postwar period also have been an important element in the feed costs of such producers. At the same time, the changes in formula pricing for Class I milk under federal and state controlled milk markets have given weight to changes in feed costs which thus have tended to offset the influence of program-generated increases in feed costs. It may well be that the continuing and ample supplies of feed grains have added to the already high degree of stability of milk production, although grain movement in relation to local production has not been examined. For that part of the dairy industry which supplies fluid milk markets, it is probably safe to say that steps were taken to ensure that the feed-grain program would not have serious repercussions on milk production or producer incomes.

In the Corn Belt, the dairy enterprise must compete for farm resources with the hog and beef enterprises. The choice of which enterprise to use in converting the available supply of feed grains into cash income is usually not difficult. The relatively heavy investment in herd and facilities, the confining nature of the dairy enterprise and relatively low labor income from it usually make it the least desirable of several alternatives. On the other hand, the regularity of the income from milk and the availability of the skimmilk by-product has led many farmers to milk production as a supplemental enterprise, particularly with hogs. But since resources devoted to milk production in the Corn Belt probably can be shifted most readily to beef production, changes in the beef-cattle cycle involve some transfer of resources between the beef and dairy enterprises. In Indiana, Illinois and Iowa, for example, it has been shown that during 1944-58 a 10-percent change in the milk-beef price ratio led to a 1.5-percent change in milk production in the following year, while similar changes in the milk-hog and milk-feed price ratios were statistically nonsignificant.²⁹ Thus one can probably conclude that short-run direct impacts of the feed-grain program working

²⁸ This section was prepared by Harlow Halvorson, Department of Agr. Econ., Univ. of Wis., Madison.

²⁹ U. S. Dept. Agr., Agr. Mktg. Serv. The Dairy Situation. Nov. 1959. pp. 13-18.

through feed prices were probably much overshadowed by influences working through the beef-cattle enterprise in the Corn Belt.

In Iowa and several states to the west and south, the combination of several factors probably has had important impacts on dairying. The relatively higher support for feed grain, plus the more rapid growth in technology in feed production, have tended to place the dairy enterprise at a disadvantage. On the other hand, growth in population has led to increased opportunities to market fluid milk and thus improve blend prices. In addition, a gradual shift toward marketing whole milk rather than farm-separated cream has meant small increases in returns from the nonfat solids part of milk for those producers with manufactured product outlets. In Nebraska and Kansas, however, these offsetting influences have not been sufficient to stop the steady decline in milk production. In most of the remaining states of the western Corn Belt, increases in milk production have lagged far behind increases in production of other farm products.

Thus it is likely that the short-run impacts of the feed-grain program on the dairy industry have been relatively minor, especially when considered in relation to the overshadowing influences of factors outside the program. The major program impacts probably have been exerted on dairying in the western part of the Corn Belt, if one were to assume that part of the post-war increases in Class I prices in eastern markets would not have come about in the absence of a feed-grain price-support program.

AREA PROBLEMS

Agriculture is a heterogenous industry, and the low income problem is more severe in some types of farming than it is in others.

Differences in Returns Among Type-of-Farming Areas

Table 8 shows that there are wide differences among farm incomes in the different type-of-farming areas. The average returns to operator and family labor in 1959 ranged from -\$4,336 in New Jersey egg-producing poultry farms to \$17,112 in the large-scale cotton farms of the Mississippi Delta.³⁰

Furthermore, these differences persist over long periods of time. Figure 19 shows the net returns data for two types of farming — hog-beef raising and hog-beef fattening — in two partly contiguous areas, carried back to 1930, along with the earnings of manufacturing workers.

Thus fig. 19 illustrates the essence of the area farm problem in summary form. It shows that the urban income series rises fairly steadily over most of the period. But the farm returns series jumps all over the place — in the case of the hog-beef fattening series, from roughly three times as high as the urban series in 1948 to only half as high in 1955. The instability of the farm returns series stands out in

³⁰ This situation is discussed more fully in: Geoffrey Shepherd, Farm programs for farm incomes. Jour. Farm Econ. 42:639-50. Aug. 1960.

TABLE 8. Return to operator and family labor, 1956-59.

Type-of-farming area	1956	1957	1958	1959
Dairy farms:				
Central Northeast	\$ 2,847	\$3,046	\$ 2,474	\$ 2,386
Eastern Wisconsin	1,154	1,137	605	853
Western Wisconsin	2,019	2,147	2,289	1,542
Dairy-hog farms:				
Southeastern Minnesota	2,497	2,179	1,967	1,432
Corn Belt farms:				
Hog-dairy	3,388	4,179	4,774	3,546
Hog-beef	1,715	2,197	2,776	1,003
Hog-beef fattening	4,486	5,312	7,822	4,189
Cash grain	5,738	2,219	1,726	82
Poultry farms:				
New Jersey (egg-producing)	255	-320	-636	-4,336
Cotton farms:				
Southern Piedmont	713	606	1,187	654
Texas:				
Black Prairie	-300	309	1,254	713
High Plains (nonirrigated)	825	4,192	5,814	2,939
High Plains (irrigated)	8,923	6,321	12,190	6,781
Mississippi Delta:				
Small	1,485	838	611	1,335
Large-scale	15,303	3,897	4,531	17,112
Peanut-cotton farms:				
Southern Coastal Plains	2,200	1,619	2,606	1,518
Tobacco farms:				
Kentucky:				
Tobacco-livestock	2,221	1,675	1,940	1,560
North Carolina:				
Tobacco-cotton	2,550	1,109	1,927	1,292
Tobacco-cotton (large)	2,938	695	1,877	1,016
Tobacco (small)	2,400	1,429	1,934	1,531
Spring wheat farms:				
Northern Plains:				
Wheat-small grain-livestock	5,326	2,066	3,824	207
Wheat-corn-livestock	1,671	3,422	4,356	-501
Wheat-roughage-livestock	1,432	2,809	2,481	-1,254
Winter wheat farms:				
Southern Plains:				
Wheat	700	2,883	8,493	4,343
Wheat-grain-sorghum	-670	1,253	6,856	4,964
Pacific Northwest:				
Wheat-pea	7,330	6,527	663	7,156
Wheat-fallow	3,318	9,258	5,601	4,559
Cattle ranches:				
Northern Plains	-701	910	2,413	1,026
Intermountain Region	3,221	5,423	8,914	7,831
Southwest	-6,471	-1,186	1,506	435
Sheep ranches:				
Northern Plains	2,773	6,965	8,087	3,164
Southwest	-6,366	-2,293	762	463

Source: Farm costs and returns: Commercial family operated farms by type and location. U. S. Dept. Agr., Agr. Inf. Bul. 176. 1960.

marked contrast to the stability of the urban income series.

This instability not only is disturbing in itself; high returns in some periods induce high investment in land, for example, which is difficult to pay off in periods of low returns.

The chart shows also that the two farm series differ greatly from each other. In most years, the returns to operator and family labor are about twice as high in hog-beef fattening as they are in hog-beef raising.

Similar differences exist among per-capita farm incomes by regions. Table 9 shows that per-capita farm income in the Pacific region is more than three times as high as in the East South-Central region. It is also higher than the per-capita nonfarm income in the Pacific region.

Tables 8 and 9 and fig. 19 suggest several things:

1. "The low farm income problem" is not simply "a" problem, affecting all areas alike. Farm incomes in some type-of-farming areas are low; in some other areas, they are higher than factory workers' incomes.

2. Perhaps some of the differences in income result from the difficulty of getting accurate detailed income data in the first place. If so, more detailed methods may be needed. These would reveal additional information, such as the distribution of incomes behind

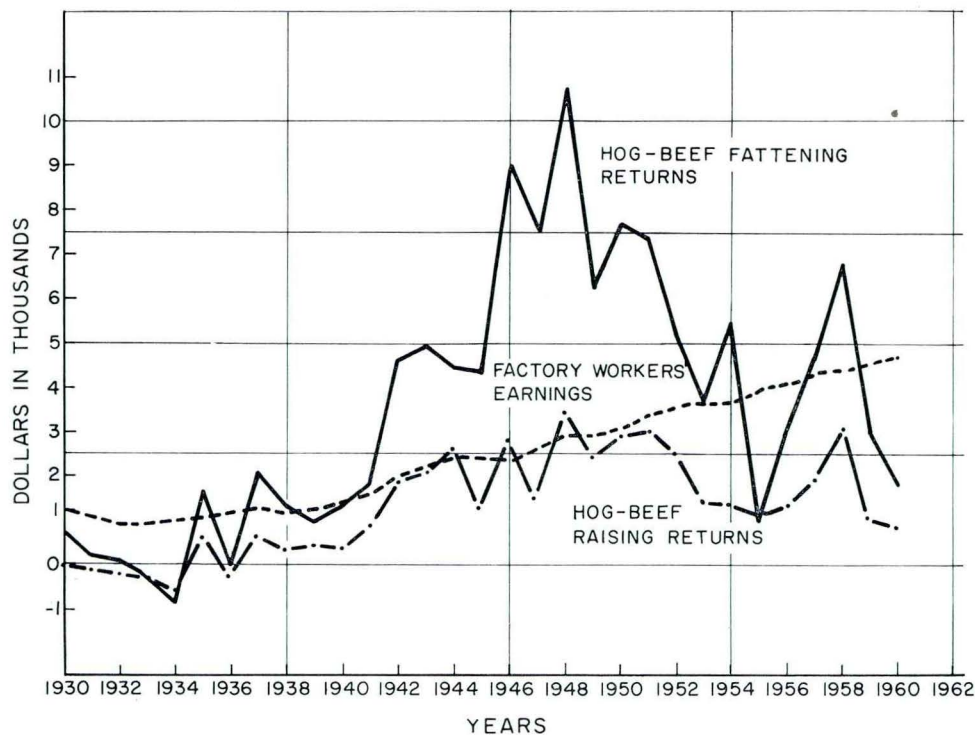


Fig. 19. Hog-beef returns compared with factory workers' earnings, 1930-58.

TABLE 9. Regional distribution of farm-nonfarm income differences, 1955.

Region	Income per capita			Population of operator households (thousands)	Total "gap" (thousand dollars) col. 3 X col. 4
	Nonfarm ^a (dollars)	Farm ^b (dollars)	Difference (dollars)		
Northeast	2,175	1,218	957	1,420	1,359
East North-Central	2,132	1,082	1,100	3,003	3,303
West North-Central	1,861	957	904	3,301	3,084
South Atlantic	1,521	879	642	3,533	2,268
East South-Central	1,366	751	615	3,105	1,910
West South-Central	1,577	1,121	456	2,318	1,057
Mountain	1,726	1,353	373	725	271
Pacific	2,215	2,575	-360	840	-302
United States	--	--	704 ^c	18,245	12,850

^a Estimates of nonfarm income per capita consist of estimated total personal income of the entire population, both farm and nonfarm, as shown in the Survey of Current Business, August 1958, U. S. Dept. Commerce, less estimated farm-operator family income, divided by the Bureau of the Census estimate of total population July 1, 1955 (excluding armed forces overseas) less estimated population in farm-operator households.

^b Per-capita income of farm-operator households consists of (1) the net income of farm operators from farming, as reported in the Farm Income Situation, FIS-175, September 1959, plus (2) the off-farm income of farm-operator families, based on data reported in the Survey of Farmers' Expenditures 1955, December 1956, U. S. Dept. Agr., and U. S. Dept. Commerce, divided by the estimated population of farm-operators' households, as reported in the Survey of Farmers' Expenditures, 1955.

^c Computed by dividing U. S. total gap by total population of farm-operator households.

Source of table: R. H. Masucci. Regional differences in per capita farm and nonfarm income. Agricultural Economics Research Vol. XII, No. 1, January 1960. Page 2.

the average income. Such information would cost money. But when billions of dollars are being spent to increase farm income, a few hundred thousand dollars spent on increasing the coverage and detail of the basic income data, if that is needed to show more accurately what the farm income problem is in the first place, would be a good investment.

3. More research is needed to determine why incomes in some areas are persistently low. This research is needed to provide a basis for area programs to deal with these low-income areas. The low incomes are not a matter of poor soil or weather; some of the poorest soil and weather is to be found in the Inter-mountain region, where the average income is among the highest in the country. They are more likely a matter of farm organization and adjustment.

4. Study of the data from which these costs and returns are compiled throws light on the nature of the farm income problem. It indicates that underlying the income problem is a basic problem of maladjustment. Some types of farming have been able to benefit from the technological revolution, either because they were more flexible and adjustable than others or because the effects of the costs and revolution on their quantities produced, for the time being, have been greater than the adverse effects on their prices. Other types of farming have not been able to adjust so well, and incomes from these types of farming have suffered.

Thus, low farm incomes are symptoms rather than basic diseases. Simply bolstering incomes, by direct payments for example, without doing something about the causes of the low incomes, would be no more effective after a few years than supporting prices has been. The basic problem in agriculture is a problem of adjustment in a rapidly changing world.

OVER-ALL EVALUATION OF PROGRAMS

It is apparent that price-support programs implemented by storage operations are inefficient and only temporarily and partially effective. The reason for this is that they were based upon an incorrect diagnosis of the agricultural problem in the first place.

The agricultural problem was diagnosed as a price problem, ignoring quantities and costs. In reality, the agricultural problem is an income problem, and it is not a *total-gross* agricultural income problem, but a *net-per-farmer* income problem. This net-per-farmer income problem in turn is the result of a still more basic problem—a problem of maladjustment to rapid technological change. This problem requires quite different programs from those that might solve a price problem.

Incorrect Diagnosis Led to Incorrect Prescription

The original incorrect diagnosis, leading to an incorrect prescription, is, in fact, making the patient worse. It is impeding rather than promoting the adjustments needed to cure the actual disease. The price-support programs are like cough syrup prescribed for a cough that is caused by tuberculosis rather than by a simple cold. They temporarily relieve the symptoms, but in this case they actually make the patient worse instead of better. They not only leave the real disease untreated; they accelerate its development.

The real malady that creates the symptom of low net income per farmer is composed of two different diseases, both afflicting the patient at the same time.

1. *Galloping overproduction.* The first disease is galloping overproduction of farm products relative to the demand for them. This results not from any increase in acreage — acreage of crops harvested has remained practically constant at about 350 million since 1920 — but from a rapid increase in yields because of technological advance. The average yield of feed grains, for example, has risen more than 70 percent since 1937-41.

This disease is not cured by price supports above long-run open-market levels; instead, it is made worse. The high price supports induce still greater production, while at the same time reducing consumption.

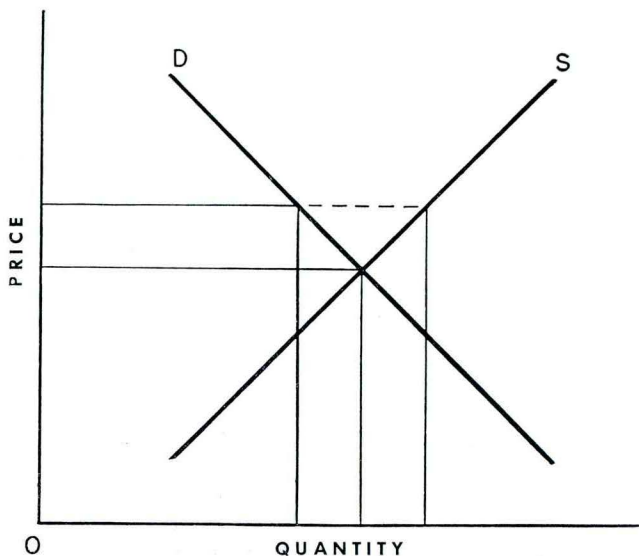


Fig. 20. The mechanism of surplus creation.

Both of these together result in the accumulation of large surplus stocks.

The mechanism is shown in fig. 20. The point where the demand and supply curves intersect represents long-run equilibrium. Supporting prices above this level reduces consumption and increases production. The resulting surplus piles up in CCC storage.

2. *Continuous oversupply of farmers.* The second disease is a continuous oversupply of farmers relative to the demand for them. This oversupply results from two things — the high birth rate on farms and the decline in the number of farms as farms get larger and fewer. The resulting continuing excess of farmers divides the total agricultural income pie into relatively small pieces and bids up the rent and price of land; this keeps net-per-farmer income low.

As the number of farms in the United States declines, fewer farmers are needed. The farm population has declined in absolute numbers from a peak of 32,393,000 in 1933 to less than 20,000,000 in 1959. But this decline in numbers of farmers has not been rapid enough to keep up with the decline in the demand for farmers. Accordingly, there has been a continuing surplus of farmers. Surpluses of farmers depress farm incomes per farmer just like surpluses of farm products depress the prices of those products.

What Storage Programs Can Do and Cannot Do

Storage programs obviously cannot handle these problems of overproduction of farm products and oversupply of farmers.

Storage programs are suitable and workable programs for smoothing out variations in prices caused by variations in production that result from variations in weather. This smoothing out of prices is a valuable objective, and storage programs can attain it. Loan rates set at long-run market equilibrium levels would do the job.

This is the job that the storage programs were originally set up to do — to smooth out the variations in prices about their long-run free-market levels. But they have been misused for a different job — to raise those long-run levels too, or at least to keep them from declining or to retard the decline.

The storage programs are completely unsuitable and unworkable for this job. They do not touch the causes of the decline in prices and incomes — the overproduction of farm products and the oversupply of farmers. Storage programs cannot cope with overproduction. What goes into storage must come out. The overproduction of farm products can only be cured by increasing consumption to match the increased production, or by reducing production to match the existing consumption, or some of both. The same is true of the excessive supply of farmers.

ALTERNATIVE SOLUTIONS

The agricultural problem results from two things: (1) the technological revolution on farms which increases production more rapidly than demand increases and (2) a continuously excessive number of

farmers, caused by the high birth rate on farms and the decline in the demand for farmers as productivity per man increases.

This problem affects all agricultural areas and types of farming. It is a national problem, requiring national programs to deal with it. But it is more severe in some areas than in others; so different programs are required for the different areas, in addition to the national programs.

We will outline alternative national programs first and then suggest the nature of possible area programs.

National Programs to Deal With Overcapacity

What is needed is a continuing solution of the national agricultural overcapacity problem that would be in line with national objectives. This sort of solution requires the development of programs that would attain the long-run objective of full employment of those amounts and qualities of agricultural land, labor and capital which could earn returns comparable with the returns that they could earn in other sectors of the economy — and do it relatively quickly and humanely and in such a way that overcapacity would not immediately reoccur.

The demand for farm products in the United States cannot be expanded sufficiently to use up the overcapacity.³¹ Neither does it appear likely that further expansion of foreign demand could do the job. The next most likely alternative, then, is to seek some means of reducing the supply.

Return Agriculture to the Open Market

It seems unlikely that agricultural production would be reduced by production control programs as a permanent agricultural policy. To keep productive resources permanently unemployed like this would not be in line with the "full employment" objectives of the nation as a whole. This had led some observers to conclude that the best thing to do with agriculture is to return it to the open market, let uncontrolled supply and demand set prices and let those open-market prices reduce production and increase consumption until the two come into equality and surpluses disappear for good.

In this situation, loan rates would be lowered to long-run market levels, so that the storage programs would simply smooth out prices — more or less completely stabilize them — at long-run market equilibrium levels.

The trouble with setting loan rates at long-run free-market levels, however, is that over the next 5 or 10 years those levels would provide unduly low incomes for most farmers — incomes below the levels for comparable resources in other occupations.

The levels of prices and incomes that would result were estimated independently by two different groups of research workers late in 1959 — one in the USDA and the other at Iowa State University. The estimates are given in tables 10 through 12. The assumptions on which the estimates are based are given with the tables.

³¹ J. M. Wetmore, M. E. Abel, E. W. Learn and W. W. Cochrane. Expanding the demand for farm food products. Minn. Agr. Exp. Sta. Tech. Bul. 231. April 1959.

These low prices and incomes would eventually drive the most disadvantaged farmers out of farming, into other occupations or on relief. It would have similar effects on farmland and capital. This would help to reduce the land, labor and capital in agriculture so that those left in agriculture could earn better returns.

This, however, would take a long time. And it would be a grinding, inhumane process if left to itself. It probably would create some poverty pockets or areas in agriculture, perhaps of considerable size, where farmers would be too poor and untrained to be able to move out into better jobs, so that the poverty areas would continue to exist for many years. They would be perpetuated rather than eliminated by low prices.

The working of the law of supply and demand in the open market eventually would tend to drive marginal farmers and areas out of farming. But the obstacles to exit from farming are so great that low incomes in agriculture would persist for many years. Is there not some more humane way of getting the job done?

Kind of Production-Control Program Needed

What is needed is a temporary production-control program that would bring about the same kind of reduction in agricultural production and numbers of farmers (in terms of total quantity) and numbers, location and product-mix, that would result if the open market could bring about efficient reallocations of production and factors of production quickly and painlessly.

That is to say: The open market eventually would maximize efficiency in line with the long-run objectives of society by reducing production and the number of farmers on some farms and in some areas. Therefore, any temporary agricultural production-reducing program also should reduce production and the number of farmers on some farms and in some areas—but do it permanently and quickly.

How could the program also do it painlessly? It could do it painlessly by employing the welfare economics principle of compensation.

Welfare Economics Principle of Compensation

Welfare economics recognizes that in a situation where a change in technology benefits some and harms others, it is impossible to measure the good against the harm and say that the one is greater or less than the other. In technical economic terms, interpersonal comparisons of utility (satisfaction) are impossible. No one can prove directly that the benefits of a new invention to one person or group are greater, or less, than the harm to another person or group that is temporarily, or in some cases permanently, thrown out of work by the new invention. But one can prove indirectly whether the benefits are greater than the harm if the person or group that is benefited can fully compensate the person or group that is harmed and still have some of the benefit left. In that case, the invention will have made one person or group better off and no person or group worse off, so there is a net gain to society as a whole.

TABLE 10. Prices of livestock products and crops, 1956-59 actual and 1959-63 projected, under free-market conditions.

	Year beginning Oct. 1						
	1956-57	1957-58	1958-59	1959-60	1960-61	1961-62	1962-63
Livestock							
Hogs (\$/cwt.)	17.40	19.00	15.70	13.50	14.20	12.80	11.00
Beef cattle (\$/cwt.)	17.20	21.90	23.00	22.00	20.90	15.50	12.00
Lambs (\$/cwt.)	19.90	21.00	19.50	18.90	19.10	17.30	16.20
Broilers (c/lb.)	18.9	18.5	16.2	16.80	15.90	15.40	13.40
Turkeys (c/lb.)	23.4	23.9	22.8	22.30	21.80	19.50	17.10
Eggs (c/doz.)	35.8	38.3	31.5	33.0	33.5	30.0	28.3
Milk (\$/cwt.)	4.21	4.13	4.05	3.91	3.66	3.43	2.67
Farm chickens (c/lb.)	13.6	13.9	13.3	13.0	12.60	11.40	10.00
Crops							
Corn (\$/bu.)	1.29	1.12	1.13	1.06	0.79	0.77	0.66
Wheat (\$/bu.)	1.97	1.93	1.72	1.71	1.67	0.90	0.74
Cotton (\$/lb.)	0.335	0.344	0.345	0.315	0.21	0.21	0.21

Source: Geoffrey Shepherd, Arnold Paulsen, Francis Kutish, Don Kaldor, Richard Heifner and Gene Futrell. Production, price and income estimates and projections for the feed-livestock economy under specified control and market-clearing conditions. Iowa Agr. and Home Econ. Exp. Sta. Spec. Rpt. 27. 1960. p. 17.

Assumptions for Table 10:

- Continued growth of United States population and per-capita income at the same rates as in recent years.
- Stocks of grain maintained at 1959 levels.
- Feed-grain yields continuing to rise at the same rates as the trend rates 1939-59.
- Export subsidies on farm products eliminated.
- Average weather.
- All production controls removed.
- The conservation reserve continued through the 1960 crop year with an additional 5 million acres added in 1960 to bring the total to 28 million acres. No new contracts would be signed for 1961 or later years. Old contracts would not be renewed as they expired.
- General price stability.

TABLE 11. Prices received by farmers — Projections based on Ellender assumptions, 1960-65, with comparisons.

Commodity	Unit	Average, 1955-57	1958	1960	1961	1962	1963	1964	1965
Livestock:									
Cattle	\$/cwt.	15.90	21.90	20.00	19.00	17.50	15.50	15.00	15.00
Hogs	\$/cwt.	15.70	19.60	12.80	11.20	11.20	11.20	11.20	11.20
Milk, whole-sale	\$/cwt.	4.12	4.12	3.65	3.65	3.60	3.60	3.60	3.60
Butterfat	c/lb.	59.2	58.5	65.0	65.0	65.0	65.0	64.0	64.0
Eggs	c/doz.	37.8	38.3	38.0	31.0	30.0	29.5	29.0	29.0
Broilers	c/lb.	21.2	18.5	17.5	16.0	15.5	15.5	15.0	15.0
Crops:									
Corn	\$/bu.	1.25	1.11	0.80	0.80	0.80	0.80	0.80	0.80
Oats	\$/bu.	0.66	0.58	0.42	0.42	0.42	0.42	0.42	0.42
Barley	\$/bu.	0.95	0.89	0.64	0.64	0.64	0.64	0.64	0.64
Sorghum grain	\$/cwt.	1.93	1.75	1.25	1.25	1.25	1.25	1.25	1.25
Wheat	\$/bu.	1.96	1.72	1.00	0.90	0.90	0.90	0.90	0.90
Rice	\$/cwt.	4.93	4.81	3.00	3.00	3.00	3.00	3.00	3.00
Cotton	c/lb.	31.22	33.10	24.50	25.00	26.00	25.00	27.50	25.00
Soybeans	\$/bu.	2.16	2.00	1.60	1.60	1.60	1.60	1.60	1.60
Peanuts	c/lb.	11.1	10.6	6.0	6.0	6.0	6.0	6.0	6.0
Cottonseed	\$/ton	49.70	43.80	35.00	34.00	33.00	32.00	32.00	31.00
Tobacco, all	c/lb.	54.3	59.5	55.5	55.8	56.1	55.3	54.5	54.2
Flue-cured	c/lb.	53.2	58.2	56.0	56.0	56.0	55.0	54.0	54.0
Burley	c/lb.	60.8	66.1	58.0	58.0	58.0	57.0	57.0	56.0

Assumptions for Tables 11 and 12:

- All production controls removed except those on tobacco.
- Price supports maintained at levels which would permit an orderly reduction of stocks over a 7- to 10-year period.
- United States population figure by 1965, 195.7 million.
- Per-capita disposable income by 1965, \$2,120.
- Retail prices and prices paid by farmers not significantly higher than present levels.
- Conservation reserve program of 30 million acres.
- Total acreage of cropland constant at the 1959 level.
- Yields increasing at less than the rate since 1940.
- Public Law 480 program continued at present levels.

TABLE 12. Cash receipts — Projections based on Ellender assumptions, 1960-65, with comparisons (in millions of dollars).

Commodity	Average, 1957-57	1958	1959 ^a	1960	1961	1962	1963	1964	1965
Livestock:									
Cattle and calves	5,500	7,403	-----	7,350	7,240	7,020	6,620	6,475	6,390
Hogs	2,809	3,416	-----	2,700	2,610	2,650	2,710	2,750	2,810
Milk, wholesale	3,906	4,094	-----	3,778	3,869	3,938	4,075	4,194	4,280
Eggs	1,723	1,770	-----	1,838	1,586	1,567	1,574	1,583	1,619
Broilers	856	1,002	-----	1,008	948	941	959	940	965
Total livestock and products	16,518	19,301	18,500	18,304	17,857	17,728	17,543	17,553	17,679
Crops:									
Corn	1,489	1,479	-----	1,112	1,104	1,096	1,104	1,112	1,120
Other feed grains	682	956	-----	429	438	422	419	425	427
Total feed grains	2,171	2,435	-----	1,541	1,542	1,518	1,523	1,537	1,547
Wheat	1,740	2,253	-----	1,100	982	960	978	977	976
Rice	241	233	-----	188	183	168	164	161	156
Cotton	2,049	1,928	-----	2,034	2,112	2,262	2,262	2,461	2,400
Soybeans	883	1,117	-----	872	904	928	952	984	1,008
Peanuts	160	203	-----	94	98	101	105	109	112
Tobacco, all	1,119	1,007	-----	1,007	1,032	1,049	1,084	1,123	1,149
Flue-cured	685	629	-----	616	633	644	674	713	724
Burley	321	294	-----	284	290	293	294	296	311
Total all crops	13,463	14,259	14,200	12,113	12,166	12,346	12,510	12,850	12,911
Total items shown	23,157	26,861	-----	23,510	23,106	23,102	23,006	23,294	23,412
All commodities	29,981	33,560	32,700	30,417	30,023	30,074	30,053	30,403	30,590

^a Average of first three quarters seasonally adjusted.

Source: U. S. Dept. Agr. and Land Grant Colleges IRM-1 Advisory Committee. Farm price and income projections, 1960-65 under conditions approximating free production and marketing of agricultural commodities. 86th Cong., 2d sess. Doc. 77. Jan. 20, 1960. p. 23.

Programs adopted under this principle, therefore, do not represent a compromise between the benefits of new technology and the disturbance that it creates, but a full attainment of the benefits and a full compensation for the disturbance.

In concrete terms, an agricultural production-reduction program that would benefit many and harm none would pay a large enough compensation to secure voluntary cooperation from the farmers on those farms which should reduce production or go out of production. This would indicate that the farmers were fully compensated for the harm they would suffer — the change that they would have to make in their lives, and the temporarily or permanently lower level of incomes that they estimated they would have to accept as a result of the change.

The same principle would apply to the nonfarmers — the local business people, the storekeepers, the bankers, etc. — in the community where agricultural production would be reduced enough to hurt their business. They as well as the farmers, would need to be compensated for the harm they suffered.

The closer that the farms and farmers which moved out of production under this program were to being those that were least efficient in agricultural production, the more nearly would the program be in line with the long-run objectives of a growing and developing economy.

Need Programs to Facilitate the Migration of Surplus Farmers Off Farms

This program still would be only half a program, however, if it stopped there. It would have dealt with the oversupply of farm products, but it would not have dealt with the oversupply of farmers. If it stopped there, the remuneration to land and capital would rise, but the remuneration to labor — to the individual — would still remain low, as it did during the 1950's, because the oversupply of farmers was not taken care of.

Production control alone can solve only half of the problem. It can raise *total United States* farm income. But it cannot deal effectively with the other part of the problem that results from the excessive supply of farmers and keeps income *per farmer* low. This calls for a reduction in the number of farmers.

The farm population in the United States has declined from a peak of more than 32 million in 1933 to about 21 million now. But the decline hasn't been rapid enough to keep up with the decline in demand for farmers. The problem no longer is, "How're you going to keep'em down on the farm?" but, "How're you going to help them get off?"

At the same time that farm incomes are low, urban incomes are increasing. Take engineering, for example; the average engineering graduate at Iowa State University in 1959 had four job offers, at a starting salary of over \$500 per month, based on a 40-hour week. There are a large number of good urban jobs for people with training to handle them. But one big reason why farm boys do not take these jobs is that they do not have the training for them. Farm boys, as well as urban boys, can compete for these good jobs if they have the training.

They need to know about these jobs and the training required to qualify for them while they are young — before they have trained themselves as farmers and sunk a good share of their capital and lives into farming. An established farm family finds it most difficult to leave farming. Also the established farm operator cannot expect to get one of the higher-paying urban jobs when he does not have the training for it.

So it appears that the best way to deal with this problem is to reach farm boys and girls while they are still in high school. They need to be shown what percentage of them can expect to find places in farming and helped to compare farm and nonfarm incomes so that those who want nonfarm jobs can take the necessary training and compete on more nearly equal terms with urban youth.

It is estimated by Karl Shoemaker of the Federal Extension Service, USDA, that 85 percent of the youngsters on farms today will not be able to find good jobs as farmers as they grow up.³² There just will not be enough farms with gross sales of \$5,000 or more to go around. This 85 percent will flood the farmer market and keep farmer incomes low just as it did in the 1950's. This will happen unless they can be informed of their prospects, provided with "vocational-industrial" training and helped to find urban jobs after they are trained for them.

This would call for a big change in our vocational agriculture training program — with agricultural training concentrated on the smaller number of farm boys who will actually become farmers. A greater number will need training for nonfarm jobs and help in obtaining them.

Several states now have area vocational schools that provide this later type of training. Iowa as yet has none. Noncollegiate technical training of this sort was offered at Iowa State University in 1959 for the first time. Much more extensive development of this field will be needed to train and help farm youth who will not remain in farming obtain the relatively better-paid nonfarm jobs and occupations. The National Defense Education Act of 1958 may be one source of funds for this purpose.

Until the excess farm population problem is solved, most of the benefits of technology and production-control programs will continue to be capitalized into land values and show up more in the form of higher prices for farms than in higher incomes per farmer. In view of this situation, it seems only reasonable that we should face the possibilities and encourage and help farm boys train themselves for the occupations they will follow, for off-farm jobs as well as for farm jobs.

Program Development

To deal with area problems, what is needed is a group of separate but related income and cost programs, area by area. These programs need to deal separately with the particular net income or return-to-family-labor problems in each area — and to deal with them, not by supporting prices or bolstering in-

³² Karl Shoemaker. Opportunities and limitations for employment of farm people within and outside of farming. U. S. Dept. Agr., Washington, D. C. AEP 89 (6-58)

come as such, leaving the underlying causes of low income unchanged, but by dealing with the underlying causes in each area.

In areas where the underlying causes are chiefly local, the programs need to deal chiefly with these local causes. In southern Iowa, for example, farm incomes are much lower than in northern Iowa, year after year. This is not just because the soil is less fertile, and it is not just a commodity problem. It arises mostly because the type and organization of the farms are not properly adjusted to the soil, topography and other characteristics of the area. In cases like these, more local or area research is needed to determine the nature of the maladjustment; why more farmers' sons, if not farmers themselves, do not move to more prosperous areas; the kind of solutions that are required to correct the maladjustments; and the programs that need to be developed by local or area groups in collaboration with state and federal agencies and put into effect to carry the solutions through.

These programs could supplement the Rural Development programs that were started in 1955 and are now operating in 200 of the 1,000 low-income counties in 30 states.

These things require more research and program development, in many cases of a different character from what has been done before. More research is needed all along the line to help farmers not only to increase production and marketing efficiency, but

also to adjust to the results of this efficiency so as to benefit rather than be harmed by it. Some research of this character is already being done to point the way; what is needed is to work out more detailed maps and directions and develop programs to deal with the problems revealed — different programs adapted to the different problems in the different areas.

These programs could be developed with the help of a series of separate conferences in each region. These conferences could include research men from the USDA and the state universities in the region in their role as research scientists; the organized farm groups in the region — Farm Bureau, Grange, Farmers Union, etc.; the commodity groups involved, such as the Milk Producers' Federation and the Great Plains Wheat Market Development Association, which includes state university research men in some of its conferences; farmers and business men in the region; and consumers. If the views of these conference members were divergent, the conferences would be a good means for resolving them.

The state universities could well take the initiative in calling these conferences, as part of their agricultural adjustment research and extension activities.

The conferences could be expected to develop programs to be coordinated with programs from other regions; or, if more research is needed before such programs could be worked out, the conferences could outline the needed research areas and arrange for getting the research done.

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